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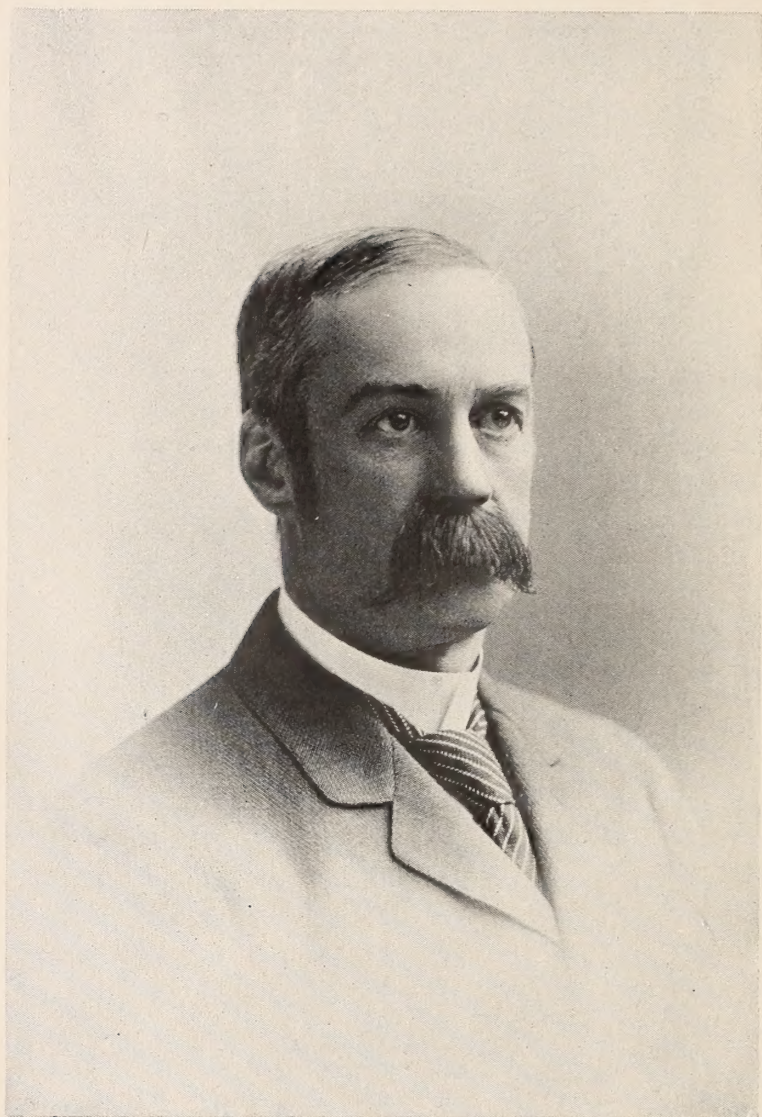
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J. D. EMMET, M. D.,
EDITOR AND PROPRIETOR

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IN MEMORIAM

WILLIAM THOMPSON LUSK, A.M., M.D., LL.D.

THE AMERICAN
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THE
AMERICAN GYNÆCOLOGICAL
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JULY, 1897

THE CLINICAL VALUE OF MICROSCOPICAL EXAMINATIONS OF SPECIMENS REMOVED BY
THE CURETTE.*

BY HENRY C. COE, M.D., NEW YORK.

This is a subject which is naturally of great practical interest to us, because every surgeon has cases submitted to him in which it is extremely important to arrive at an exact diagnosis with regard to the condition of the corporeal endometrium. Now, in the very cases in which we are most in need of help from the pathologist we unfortunately cannot always receive it, for various reasons. The surgeon stands necessarily in a different attitude toward the patient from the pathologist. The latter is called upon simply to give a more or less definite opinion based upon the microscopical appearance of a certain specimen. The surgeon, on the other hand, is expected to give a positive opinion to the patient or to her friends, an opinion on which may depend not only her future peace of mind, but also the decision with regard to a radical operation; and sometimes he is placed in a painful position of uncertainty. The object of this discussion, I infer, is to elicit the results of our experience with regard to the amount of information which is furnished by the microscope in doubtful cases.

There is considerable literature on the subject. If you will glance at any of the recent editions of the text-books you will find that the microscopical test is generally regarded as the crucial one. After dwelling upon the symptoms of malignant disease of the corpus uteri, the writer invariably concludes by saying

* Discussed before the New York Obstetrical Society, March 16, 1897.

that the final test is the examination of curettings. Now, this would lead the inexperienced reader to believe that the microscope will always settle the question definitely, but unfortunately it does not. A paper by Dr. Hunter Robb in the last volume of *Gynæcological Transactions* contains reports of one hundred cases in which he examined curettings from the uterus. He is known to be a careful man, and his conclusions should be received with due deference. Out of these one hundred cases he states that in ninety-five he found that he was able to make a positive diagnosis by the microscope. That is certainly a much larger percentage than most other men can show, but he goes on to qualify this by saying that in sixty-three cases in which the symptoms indicated a benign condition the microscope showed the absence of malignancy, while in only two cases in which malignant disease was diagnosed did the microscope confirm the diagnosis. In twenty-six cases in which malignant disease was suspected its absence was shown by the examination of the tissue removed. In other words, his results show that the negative evidence furnished by the pathologist in these cases is more valuable than the affirmative.

I would like to refer briefly to two or three illustrative cases. One patient had been under the care of a physician for two years. He curetted her uterus two or three times, examined the scrapings very carefully (being a competent pathologist), and made a diagnosis of adenoma. On account of persistent hæmorrhages, without pain, he sent her to me. I decided that it must be a case of malignant disease; received her into the Cancer Hospital and she was examined under ether. I curetted and removed a quantity of brain-like material. It was examined under the microscope and pronounced positively to be simple adenoma; nevertheless, vaginal hysterectomy was performed. Sections were made of the uterus, they were repeatedly examined, and the pathologist pronounced it non-malignant. The patient has now, after a year and a half, an extensive recurrence. Another case was that of a young woman who had atypical hæmorrhages, not only menorrhagia, but metrorrhagia, without pain, her health being good. I curetted and obtained a quantity of very suspicious material, which was examined and pronounced to be ordinary fungosities. I promptly removed the uterus. Sections through the organ showed undoubted carcinoma.

Another recent case called my attention still more forcibly to the difficulty of making an exact diagnosis. The patient had been under the observation of a physician in a neighboring city for nearly a year. She had had, within the last six or eight months, profuse menorrhagia, and during the last three months she had had metrorrhagia more or less constantly; there was no foul discharge, and her general health was fair. She had been having for the last three months shooting pains in the back and abdomen. I examined, with a colleague, her under an anæsthetic, and found the uterus enlarged. I introduced a curette and removed a drachm of soft, brain-like material. I said at the time that this was probably a case of malignant adenoma of the body of the uterus, and rather than have the woman return home unrelieved, I thought that hysterectomy was certainly indicated. Two pathologists pronounced that there was absolutely no sign of malignancy, the condition being simple adenoma. I examined some of the slides, and could myself find no evidence of malignant disease. I stated the case clearly to the patient and to her husband, and after a good deal of vacillation, they finally decided to have a radical operation. He reconsidered it several times, and when she was on the table asked whether I could swear that it was malignant, as he would not have the operation unless I could. I advised him to take his wife home at once, which he did. I have not the slightest doubt that the woman will return with well-marked malignant disease. [She *did* return three months later, and, on the advice of the late Dr. Lusk, I performed total extirpation successfully. The diagnosis was fully confirmed.]

I have mentioned these cases simply to show the doubtful position in which we often stand. Another case was that of a patient who was passing through the menopause. Although her general health was fair, she had had pelvic pains for a long time; she had irregular hæmorrhages, not only menorrhagia, but metrorrhagia; and had a peculiar bloody and rather offensive discharge. I placed her under ether twice, examined and curetted her thoroughly, removing a quantity of suspicious tissue. This was examined microscopically, and in both instances was pronounced to be hyperplastic endometritis. I confidently expected that a radical operation would eventually be required, but she has had no return of the hæmorrhage. Over a year has elapsed, and I have no reason to believe that there was any malignant element in

that case, and yet she had a large soft uterus which bled easily, and the tissue removed presented all the macroscopical appearances of malignant disease.

I need not go into the clinical history or lay stress on the one symptom which induces us to resort to the curette for diagnostic purposes, that is, hæmorrhage. If we are to accomplish positive results we must get hold of these cases in their incipient stage, consequently we should always look with suspicion on atypical uterine hæmorrhage. We know that ordinary menorrhagia is generally a symptom of hyperplastic endometritis, or of decidual remains, and we also know that atypical hæmorrhages after the menopause are extremely important; but we must remember that even after the menopause we may have such hæmorrhages due not to cancer, but to senile erosion, or endometritis. Those who are accustomed to curette judge a good deal by the condition of the uterus at the time of the operation, and by the material removed. The macroscopical appearance of the hypertrophied mucosa is so characteristic as compared with the soft, brain-like material of adenocarcinoma or sarcoma, that we feel pretty certain from the gross appearance, in connection with the clinical history, what the condition is with which we have to deal. I need not allude to the appearance of retained decidua, or of the pseudo-decidua of ectopic gestation. A description of the histology belongs rather to the pathologist, but the practical surgeon is sometimes very much puzzled by the pathological report; he can not understand exactly what is the criterion of malignant disease.

The claim is made by the pathologist that he often fails to receive a typical specimen; that is often true, but we give him the best that we can. The sharp curette, even when vigorously used, may fail to remove the desired tissue. Usually, by proper curettement covering the entire surface we ought to obtain some good specimens, but we can hardly be expected to dig out a portion of the uterine wall. I think that a mistake is sometimes made in demanding too much of the pathologist. We submit with the specimen a scanty history, or none at all, and expect him, from an inspection of the microscopical sections, to deduce the entire history and prognosis of the case, very much as a paleontologist would reconstruct a fossil animal from a single tooth. We should send him a clear history of the case, and

mention the suspicions which we entertain, and allow him to support or to disprove the diagnosis as he can.

Now, the practical question comes up, how much can we depend on the pathological report, and how much upon the clinical history? It seems to me that we might divide the cases into two classes. The first includes younger women, in the prime of life, with irregular hæmorrhages, where we suspect malignant disease. In these cases, unless the history is pretty strong, we should consider the case as doubtful until the fact of malignancy is proven. The microscope will help us in those cases rather by the negative than by the positive information which it affords. But, when we come to the other class of cases, including women of advanced years, with a fairly well-marked history, especially of obstinate atypical bleeding, when we remove material which has a suspicious appearance, we are justified in making a diagnosis of malignancy even though the microscope throws no positive light upon it. I would not be understood as advising any man to go ahead recklessly and remove the uterus without carefully weighing all the evidence, but the question arises: Shall we ask a patient in this condition to wait a year or two until she has passed the stage at which the operation will be curative, because we are not entirely certain in our own minds? It seems to me that it would be better for us to occasionally remove a non-cancerous uterus, rather than to run the risk of allowing the patient to go on until the disease becomes inoperable. It has sometimes seemed to me, with all due respect to our friend, the pathologist, that pathology has not made as many advances in the last ten years in this particular direction as in some others; in other words, that we are not as near to making a positive diagnosis by the examination of curettings as we might be. This is not offered in criticism of the pathologist, because we can not expect him to accomplish impossibilities, and I do not think any pathologist should make a diagnosis of malignant disease to accommodate the surgeon, or in order to fit in with the history of the case; but I regret that we have not some more positive microscopical test of malignancy in these doubtful cases.

MULTIPLE MYOMATA IN THE ABDOMINAL CAVITY.*

BY BACHE McE. EMMET, M.D., NEW YORK.

The tumors to the history of which I ask your brief attention belong to the class of myomata and to that subdivision called by Zenker, *Leiomyomata*, or *myoma lævicellulare*, or such as are formed by the unstriped muscular fibre.

The ever-familiar representative of this order is to us the myofibroma or the myoma of the uterus; to some, however, it has occurred to meet with one or another of this class of tumor springing from other organs of the body, though, as a fact, they are exceedingly uncommon, having shown themselves, hitherto, so far as known, only in the skin, the scrotum, the prostate, in the orbit, the eye, on one or another blood vessel (saphenous vein in particular) and in some portion of the digestive tract, the œsophagus, the stomach or the intestine (duodenum or ileum) and in the liver, on the hepatic ducts. Others have been mentioned, but the accounts of them are not entirely trustworthy, as the microscope was not relied upon as a control.

It is about the uterus that we find the largest examples, those to be found in other parts of the body seldom exceeding the volume of a walnut or, at most, a pigeon's egg.

Their mode of formation is, in all instances, practically the same, that is, barring the question *why* they grow, it is seen and, when not seen, believed, that they invariably take their origin from their own kind. In other words, it is held by histologists that they cannot spring from any tissue but unstriped muscular tissue, and, when that cannot be demonstrated, it is more the fault of the searcher than of the growth. Virchow says: Band III., lesson 23, "and no tumor of this character of any size has been found in any location where there was not already similar tissue."

The *why* referred to above has been met hitherto merely by the word "irritation" or "inflammation" of the part giving rise to the new development, but, at the present day, that can stand for noth-

* Read before the American Gynæcological Society, May 4, 1897.

ing, and in this, as, so often elsewhere, we must still be content to wait and watch for the unfolding of many of the causes in disease and surgical affections. Such tumors have been generally found in people of advanced age, though Ziegler, "General Pathology," says they may appear in early childhood or even before birth. They are rare under thirty-five, most common in women, because of those of the uterus, but, in other organs, more numerous in men. Their manner of growth has been searchingly investigated, the outcome of the study being still in somewhat of a doubt, however, in view of the difficulties still inherent to the full elucidation of the subject.

The uterus, itself, as the great representative of unstriped muscular tissue, has been watched in its development of pregnancy, to solve the question whether there was a *new formation* of muscular fibres and bundles, or whether there was a splitting up and increase of size merely of those already present, the additional volume of a pregnant uterine wall being further contributed to by increase in formation and development of connective tissue and blood vessels. (See studies of Kölliker, Virchow, Viner-Ellis and Foerster.) The opinion of the best investigators expressed a doubt for many years. Vogel, quoted by Virchow, held that new cells and new nuclei could spring from exudate or cystoblastema and continue to grow into fibre cells, and Virchow himself says that we very commonly find in the walls of the uterus, as well as in small myomata, numerous round cells of various sizes and in every stage of transition up to fusiform and fibrous cells, and that in the gravid uterus there is a gradual transition of the round cells to the fibre cells, so marked that one cannot distinguish the latter from organic muscular fibres (segmentation of the muscular cells).

Wagner, in his Manual of General Pathology, page 420, writes: "New formation of smooth muscular fibres: this occurs in the form of hypertrophy and tumor; its regeneration is not yet known." And further: "An enlargement and new formation of organic muscular fibres occur physiologically in the female genitals, as consequence of conception. The uterus, at the end of pregnancy, shows nearly a twenty-four fold increase in size, which is chiefly dependent upon muscular tissue. The muscular fibres are considerably enlarged (to form three to eleven times their length and from two to five times their breadth) and to the sixth month there is a new formation of numerous muscular fibres. Smooth muscular fibres, according to

Kölliker and Foerster, may also be formed from connective tissue; according to Molescott and others, they are only formed from muscular fibres themselves, partly by longitudinal splitting, partly by branching and budding.

It is also Wagner's view that a new formation of smooth muscular fibres, independently of pre-existing smooth muscular fibres, as in many membranes, in many sarcomata, and so forth, has not yet been certainly demonstrated, and he alludes to a report of Arnold, published in Virchow's Archives, XXXIX., page 270, who mentioned finding in a case of old empyema, on the inner surface of the sac, such quantities of smooth, new-formed muscle fibres that they formed a continuous, tolerably thick muscular covering; they arose from rounded cells, most of which were situated toward the interior. In refutation, he quotes Neumann's view, who in Archiv d. Heilk., X., page 600, has shown that these were much more probably connected with the development of new connective tissue.

Ziegler, in his General Pathology, in speaking of Leiomyoma, says: "If the new growth takes place in muscular organs, it proceeds from the muscular layer, forming in its development bundles of muscle fibres interwoven in various directions. New muscle tissue probably arises only from old muscle tissue."

The idea set forth by Virchow in regard to the heteroplastic development of smooth muscle fibre, in the formation of new arteries in adhesions, and so forth, is one that holds to-day, and it would seem to offer the one explanation of the presence of leiomyomata in regions where one cannot determine the presence of pre-existing smooth muscle fibres; though in tumors having such an origin, one expects to find rather a preponderance of blood vessels, as set forth by Ziegler again, in his text-book of Special Pathological Anatomy, in referring to leiomyoma of the skin: "It may originate from the unstriated muscular fibres of the arrectores pili, or from those of the vessel-walls; in the latter case it is apt to be associated with local dilatation of the capillaries, or telangiectases, the combination being described as angiomyoma;" and also in his General Pathology, "In the skin and subcutaneous tissue, as far as there are any observations on the subject, the new growth of muscle fibres has its origin in the muscularis of the vessels, which not only becomes thickened, but gives off separate outrunners of muscular cells. This new formation of muscular tissue may easily be associated with the pathologi-

cal formation of blood vessels, so that tumors result, to which the name angiomymata applies."

It seems to be well established that leiomyomata arise by hypergenesis, and their tendency is, certainly, to become isolated, to that extent that they have sometimes been found in regions where, according to the best knowledge, no smooth muscle fibres had been present, which has given rise to the belief that they might *originally* be heterotopic, as they are *found* at the time. Such we see in the so-called detached fibroids in the abdomen, which are supposed to have once belonged to the uterus or its annexa. As Virchow says: "Even very small peripheral myomata are generally extra-muscular, even the small pedicle atrophies, and they appear just like heteroplastic growths." He says further, "Wherever we find a myoma developing, we may be sure it has been at the outset continuous with the pre-existing organ; the subsequent displacement, which is gradual, is only a seeming independence, and has misled many who have observed them.

Though such tumors are said to be permanent, there are undoubtedly many changes which may take place both in their size and in their structure. It is especially noticeable in the uterus, where we find these tumors so constantly and in such large numbers. There we see them diminish and increase in size, due either to their own contractibility, or to compression of the organ about them, or, again, to a change in their vascular supply. This is particularly marked in the uterine myomata when the menopause is established. Fibrous transformation or induration, calcareous degeneration, especially in uterine and intestinal leiomyomata, calcification of the connective tissue, and even a fatty change have been mentioned as possible terminations of such growths. There is also an œdematous infiltration, a gangrene proceeding from a peripheral inflammation, and the breaking down of such tumors into cavities, due to changes in the blood vessels, with bloody effusion.

With all such transformations possible, it has always been, and it is said to be well demonstrated that "leiomyomata do not multiply or become general." Virchow also says in that same lesson 23, Band III.: "Once a myomatous polypus is removed it never grows again; we never see a recurrence nor a metastasis in myomata."

Hénocque says, in Dict. Encycl., D. S., Med., Paris: "One certainly does find multiple leiomyomata, but, up to this time, no sec-

ondary productions of these tumors have been found, either in the viscera or in the ganglions." It is essentially a benign growth.

Although myomata do not show any decided tendency to malignancy, they may undoubtedly degenerate. Virchow cites one form described by Paget, which may become generalized, and he alludes to one of his specimens of a fibroid of the uterus, which seemed to show that same tendency, but he thinks the larger number of such should be comprised under sarcomata, especially the spindle-celled sarcomata which, he says, microscopically sometimes look wonderfully like muscular tissue. (T. II., page 195, Virchow.)

Should the elements of malignancy exist *in* leiomyomata, they will degenerate, the most frequently into carcinoma (uterine myomata) or into the spindle-celled and round-celled sarcoma.

In regard to symptoms produced by such tumors in the abdominal cavity as I show to-day, nothing definite can be said which might apply to cases at large.

It will be readily seen that by their size they might be productive of considerable harm by pressure on the various organs in their neighborhood, notably the intestine, producing obstruction, or that they might interfere with the function of the bladder; that the one implanted upon the ureter might determine hydronephrosis and destruction of a kidney; that, according to their location, they might interfere with the stomach or the gall bladder; colic and diarrhoea, lasting for several years, was observed in one case of intestinal leiomyomata. According to their attachments, they may also drag upon the viscera and produce reflex symptoms akin to those we see in movable kidney or displaced spleen. Those forming upon the intestine might cause intussusception; those in the liver might well simulate the various functional and organic diseases of that organ.

I will not dwell upon the subject of diagnosis, for I realize fully that the extreme rarity of such cases would of necessity place them outside the ordinary category of possibilities, and that it would be only very rarely that such tumors could be so placed in the abdominal cavity, that the question of differential diagnosis would even arise. Such as I have here presented would undoubtedly form the larger class, and their consideration would surely involve no further question than the opportune moment for removal, since they did not even reveal their true attachments on examination, and passed for uterine fibroids intimately connected with the womb,

though there was a strong leaning to class them as forming a multilocular cystoma of right ovary, malignant.

Should such growths, however, float among the intestines, or belong to the variety springing from its muscular coat, we would have presented to us a vast field of conjecture, which would probably find its best solution in the history and the progress of the case. The size of these tumors being so exceptional, it would scarcely be correct to argue from them for like cases. Furthermore, the exceedingly rapid invasion would here mislead, rather pointing to a disease of malignancy, which this is not.

The diseases invading the omentum, and forming tumors, are few, but they are of a nature which, by palpation, may well be confounded with such tumors as my specimens; for instance, lipomata, cystic and fibrous tumors. The few of these which I have been able to find in the literature of the omentum, I have studied, to learn in how far one or another might correspond with my case. Of all collected I can find but two, which are called fibrous tumors of the omentum. One of B. Woodward, in the *Med. and Surg. Rep.*, Phila., 1859, N. S. II., page 380, removed postmortem; patient 38; tumor lobulated; no cysts, but hard and solid; when cut it showed a fibrous structure slightly intermixed with fat, and gave a grating sound under the knife; of light yellow color internally, its weight three pounds, thirteen ounces, omental, very little vascularity, only large vessel was branch of inferior mesenteric; taken by Dr. Woodward and by Chicago and New York doctors for uterine fibroid; all advised against operation, a most remarkable contrast with the attitude of to-day. And a second one by E. Andrews, in *Chicago, Med. Exam.* 1860, I. 22, called fibrous tumor of omentum, removed, also, postmortem; no connection with the uterus, latter normal in size, ovaries healthy; a few bands adherent to viscera; very little vascular supply.

REPORT OF CASE.

On November 22, 1894, I removed from the abdominal cavity of a woman aged twenty-five, a large solid mass, extensively covered by omental and intestinal adhesions, attached over the fifth lumbar vertebra, ten by twelve inches, base one and a quarter inches in diameter, pronounced myofibroma, dense white tissue, by Dr. Freeborn, Pathologist of the Hospital, who also held that it was at one time

attached to the uterus, from which it had its origin. I consider that the mass was retroperitoneal, as it had raised the ureter up on its surface, and I then supposed it was a fibrosarcoma. I also removed the left ovary, which was cystic, and the tube. Right ovary and tube were normal. There was no evidence of any disease about the uterus.

I chanced to sever the left ureter at that level, and then made a uretero-ureteral anastomosis. The interest I felt in the progress of the case from this point of view, led me to watch the woman carefully, and to palpate frequently over the site of injury. This operation, with description of case, is recorded in the *American Journal of Obstetrics*, Vol. XXXI., No. 4, 1895. On account of the subsequent history of the case, I am led to quote one paragraph from that article: "As recovery was progressing (third and fourth day) I feared there was evidence of urinary distention of the proximal portion of the ureter, which would either cause rupture of the union or lead to hydronephrosis. This apprehension was dispelled by percussion of the tumefaction, directly over the site of the repair, and the further information gained that it did not increase in size. Supposedly, we had here merely the agglutination of a mass of intestines to the newly vitalized surfaces; there was nothing like obstruction of the tube." My patient returned to her home, Middletown, Conn., in the fourth week after operation, December, 1894.

The next I heard of the patient was from her physician, Dr. Edgerton, of Middletown, Conn., who wrote me that he had delivered her of a boy, by forceps, April 22, 1896, seventeen months after her laparotomy, and further says: "After delivery I found on left side a large hard mass, eight inches long, four or five deep and about three or four thick, which had been crowded well to left side and seemed to stand on posterior thin edge, rather high for ovary, feeling much like an enlarged spleen, though low for spleen. She has convalesced very well, though there has been a little disposition to spurts of flowing (though I think now it is all over). The shape of the tumor has changed considerably since pressure is gone (one month), and feels more like a hard multilocular ovary and lies more nearly in the left ovarian region. There is no pain. When I sent her for the operation (November, 1894) I felt as though the tumor might be sarcomatous, but she came back in such good condition, and your operation had been apparently un-

attended by any serious symptoms of any kind, and her subsequent health so good, that I was rather surprised to find this other large mass."

Another letter a month later, June 12, 1896, says: "I think the tumor is unquestionably a return of the fibroid at the original site. It feels like the first tumor, has the sense of hardness, and the same irregular contour, is in the same locality, and is more or less movable, lies too far forward and too low down for the kidney. I do not think that the kidney would present the shape of this tumor, and there is no evidence of any disturbance of the function of the ureter or any of the urinary organs."

A third letter, dated October 15, 1896, four months after the last one, says: "Since writing you, another small tumor has developed on the right side; I have had her wean her baby, and I wish to send her to your service at the Woman's Hospital, for your further observation and operation if you think advisable. The larger tumor has increased somewhat since her confinement, April 22, 1896. About three weeks ago I found the second one, about the size of an orange; both are distinctly movable."

The patient came to me November 2, 1896, two years since the first operation. I found a large nodular mass, lobulated, apparently, upon the uterus and forming a part of it, still somewhat movable independently. There were evidently several tumors; three quite filled the false pelvis and one mass was in the true. It was difficult to explore the posterior surface to any purpose. The patient was quite anæmic and had lost flesh.

I operated upon her in the following week. Median incision of abdominal wall; exploration by hand made me aware that the tumors crowding about the uterus were not in any way attached to it. I seized one, drew it out, found it attached to the omentum on all sides, and with adherent small intestine mostly surrounding it. On its lower portion, a number of coils of intestine were also adherent. Once the intestine was removed, the tumor appeared to be attached by a pedicle consisting of a large number of blood vessels and omentum. The base was transfixed, doubly ligated and tumor was removed. Then a second, a third, and so on, until seven were withdrawn and tied off. All were lobulated, and had a pedicle of omental tissue, containing large vessels. The seventh and last tumor had the appearance of a kidney, and was firmly adherent over the

spinal column, lying with its convex edge to the right. After exploring for the kidneys and finding them in their proper place, I still made doubly sure of what I had to deal with before removing it, by cutting into it, when I found that it presented the same structure as the other masses. This growth was implanted directly over the uretero-ureteral anastomosis of two years before, and the attachment was so close that in its removal I excised a small elliptical bit of the ureter. This was repaired with black silk, and covered by peritoneum. Right ovary was found cystic, and was tied off. I noticed three nodules the size of half filberts upon the left side of the uterus; paid no heed at the time; the peritoneal cavity cleansed, irrigated and closed. Operation lasted nearly three hours.

The masses weighed 3,500 grammes (seven pounds) when seen by the pathologist, Dr. Freeborn. He reports: Irregular-shaped nodular masses. The surfaces of all the masses are covered with thin adhesions. Microscopically examined, all of the masses prove to be nearly pure myomata.

During her recovery I felt the same apprehension as mentioned above, referring to the time of the first operation, on account of the tumefaction developed at the site of removal of the tumor, in the location of the original one (fifth lumbar vertebra), which apprehension was caused both by the fear of obstruction of the ureter and by the dread of seeing a recurrence of the tumor which, this time again, I thought must be a sarcomatous growth.

The tumefaction in the first few days reached almost to the volume of the last growth removed, namely a large-sized kidney, which fact, combined with some incidental rise of temperature (104°) led my Assistant and House Staff to telephone me late one night that they deemed a secondary operation inevitable, and had prepared the patient for a laparotomy, awaiting my arrival. Everything proceeded well, however, and the patient returned to her home December 17 with the mass still apparently growing, though more slowly than at first. The rise of temperature for five successive days was probably owing to the "grippe."

A letter from her physician two and a half months later (March 11, 1897), says: "Mrs. M., on whom you operated, has got on finely. She is able to do her housework, take care of her baby, now about a year old, and, besides, her husband has been sick for three or four weeks in bed. I am very glad to learn that the pathological

study of the growths removed, promises better than the clinical symptoms warranted you to expect.

"I find a small rounded protuberance on the posterior wall (of the abdominal cavity) about the size of half an English walnut (split in the middle) and about the same form, about one-fourth of the distance of the line between the two anterior superior spinous processes, to the left. It is smooth, symmetrical, and free from pain. The womb is free from growths and rather undersize. She has no pain, has fair strength, good color, and has gained in weight.

"This is the only evidence that I can find of anything abnormal within the abdominal cavity. She has no trouble from her urine in any way. Altogether her condition is satisfactory, most wonderfully so."

The study of one case, is, I appreciate fully, of comparative insignificance, still, just as "the exception proves the rule," so may this one observation test the value of laws hitherto fully accepted, and I trust that my imperfect study may be an impetus to further research, and it may be that the mature discussion of this distinguished body shall point to a different and, perhaps more unique interpretation from that with which I have invested it.

To say the truth, however, I am at considerable loss to offer any explanation of the phenomena attending the growth of the tumor of two years ago. That one, I am firmly convinced, was situated beneath the peritoneum, that is, behind it, inasmuch as it crowded the ureter before it; the latter lay upon it, and it was, therefore, cut through entirely in severing the growth from its base. What could such a growth be in such a location, without the presence of smooth muscle fibres, other than those of the ureter, or of some blood vessel, normal or of recent development in organizing lymph?

If it was not beneath the peritoneum, but merely appeared to be so, from the position of the ureter, then, of course, it would enter the same category as these which were *in* the peritoneal cavity, whether covered themselves by such it is almost impossible to tell.

Now, what can these present growths be but drops from the uterine tissue, as it were, into the abdominal cavity, finding their location all high in the cavity, it is true, much above the level of the empty uterus, but which may have been deposited at various points in the abdominal cavity when the uterus was parous, therefore reaching high up above the umbilicus, where they may

have lain as dormant foci until the term of pregnancy was over, then to fire up into activity, so that they were noticed at successive periods during lactation, growing almost at sight.

Can we, further, suppose that such tumors might spring from the surface of a uterus which, five months before the beginning of pregnancy, was inspected and pronounced perfectly healthy, as far as sight and touch could establish? I am forced to believe that such an occurrence has taken place in this exceptional instance, and that nodules, however small, must have been somewhere within the body of the uterus, but inactive, until the fresh provocation came to establish a new and rapid development of uterine tissue, which, then, was suspended in their direction until the uterus had completed its work of gestation. Once the child was weaned, to allow the mother to come to New York, the growths seemed to assume additional activity, even to the point that I hastened to operate, before she should be too much weakened, believing as I did that the new growths were malignant.

Still an unexplained event, except it be by recurrence, is the re-appearance of a growth in the very spot from which I had removed the tumor of two years before. At that time I had a base of one and one quarter inches; supposedly, it contained abundance of smooth muscle fibres and cells, from which another growth might spring, but even that process established, to my mind, that we may have to dread such tumors much as we would a malignant one, considering the possibility of harmful elements growing up with them, once the system of the individual is depleted and the blood is vitiated.

Another interesting point which occurs to me is the ultimate absolute disappearance of the growth which, after the last operation, had established itself at this same location; and the question arises: Could this have been effected by the same process which induced the atrophy of the uterus, namely, the removal of the remaining tube and ovary; in other words, would such an effect be produced upon tissue, even at a distance, which was originally engendered by the uterus? This would imply a real difference in two smooth-fibered muscles, though not known to differ histologically.

UTERINE FIBROMATA IN PREGNANCY, WITH REPORT
OF A CASE.*

BY W. H. RUMPF, M.D., CHICAGO.

In reporting a case of pregnancy complicated by fibroids, I take the opportunity to make a few remarks about this not infrequent condition. The case in brief is as follows:

Mrs. G. A.; aged thirty-five years; married two years; had menstruated regularly and had never been pregnant before. The previous and family history represent no unusual features.

I saw her first at St. Luke's Hospital Dispensary, when she was about three months pregnant. I did not find anything abnormal in the local or general condition. The urine contained no albumen. She did not report to me again until about five months later. The urine then contained about two per cent. albumen and numerous casts. There was some œdema of the lower extremities. I prescribed exclusive milk diet and diuretics and did not hear from her again until I was called to the confinement on December 27.

She had been in labor about two hours. The pains were very severe and almost continuous, the face had an anxious expression, and the patient was very restless and complained of headache. The lower extremities and the vulva were very œdematous. On external examination I was surprised to find the fundus of the uterus covered with subserous fibroids, varying in size from one to four inches in diameter. The majority of the tumors were on the posterior surface of the fundus. The position of the child was a left occipito-anterior. The foetal heart-tones were 140. The os was found to be dilated about the size of a dollar, the bag of waters had ruptured, and the head was engaging well in the pelvis. There was apparently no obstruction to the passage of the child through the parturient canal. I had scarcely finished examination when another complication required my attention. This was a very characteristic attack of eclamptic convulsions. I immediately injected one-fourth grain morphia and made preparations for forceps delivery. In half an hour the head was almost entirely in the pelvis when a second con-

* Read before the Chicago Gynæcological Society, May 21, 1897.

vulsion took place. The termination of the labor by forceps now seemed indicated, and was easily accomplished. The child was asphyxiated, and did not rally after half an hour's manipulations according to Schultze and Laborde. The placenta was expressed in twenty minutes and a perineal laceration closed with four silkworm gut sutures. Immediately after this latter operation a third eclamptic attack occurred. The uterus contracted well, and there was no unusual hæmorrhage. Owing to very unfavorable surroundings, I had the patient transferred to St. Luke's Hospital the same day.

The principal points of interest in the puerperium were the rapid disappearance of the tumors and the cessation of the albuminuria with its accompanying œdemata. Apropos of the latter, I would mention that the patient passed 3150 of urine during the first twenty-four hours after her entrance into the hospital. At one catheterization 40 3 were removed. At the end of two weeks the patient was out of bed and the urine was entirely normal. The fibroids had diminished to one-half their original size. I examined the patient two weeks ago, about four months after the confinement, and found only three or four fibroids of the size of a walnut still remaining in the posterior wall of the uterus. The latter was in good position, the patient was menstruating regularly, and was in excellent health.

In following out the train of thoughts suggested by this case, I will touch only briefly on the eclampsia. The temptation to try to bring it into connection with the presence of the large fibroids is great. The latter undoubtedly caused an unusual enlargement of the uterus, and on account of their location may have been an ætiological factor in the causation of the nephritis and eclampsia by pressure on the ureters.

It is not my intention to enter upon these interesting speculations any further, and I shall confine my remarks solely to the complications caused by fibroid tumors in pregnancy in general.

The first point of interest that presents itself is the question in how far fibroids predispose to sterility. According to statistics of Güsserow (1), Schroeder (2), Lefour (3), Winckel (4), Pestalozza (5), and Müller (6), it appears that about seventy-five per cent. of patients in general with fibroids are married women, and that of these from twenty-five to thirty per cent. are sterile. In order to form an unprejudiced opinion in how far the fibroids were the cause of the

sterility, it will be necessary to take into account the percentage of sterile marriages in general. The data in this respect are very meagre, and in considering them we must remember that women that have borne children will be more likely to come under the notice of the gynaecologist than those that have not. According to Simpson (7), Wells (8), Sims (9), Duncan (10), and Grünwaldt (11), the percentage of all sterile marriages varies from eight to fifteen per cent. This would give us an increase of sterility in consequence of fibroids of over ten per cent. As reasons for the sterility mechanical obstruction to conception, hæmorrhages and degenerative changes in the appendages are mentioned. Hofmeier (12), who has written by far the most exhaustive treatise on this subject, contends that in many of the cases cited in the various statistics, the sterility has been present for many years before the fibroids were present or at least caused any appreciable disturbance, and that consequently in a great number of cases the original cause of the sterility must be looked for in another direction. That in other words the fibroids were wrongfully accused of being the cause, whereas they were only accidental complications. He argues further that the disposition to the growth of fibroids in the uterus in general is very great, and inasmuch as the majority of women are married, we find the greatest number of myomata among married women. I am inclined to subscribe myself to his assertion that the ætiological importance of fibroids as the cause of sterility has been greatly over-rated.

I come now to the second consideration of importance—the influence of myomata on pregnancy. Here, too, many of the statistics which apparently show the great preponderance of abortions in pregnancies, complicated by fibroids, fail to take into account the percentage of abortions in general. The chances for abortion are of course greatly dependent upon the location of the tumor. Thus interstitial and submucous fibroids predispose more to abortion than subserous growths. The very rapid growth of the tumors in pregnancy, as in my case for instance, is similar to the usual hypertrophy attending the muscular and fibrous elements of the uterus in general, and also upon a serous infiltration and increased vascularity. The lymph-spaces enlarge and frequently form cysts. Thus the tumors occasionally become so soft and flattened out that they are recognized with difficulty. The degenerative changes which they undergo after pregnancy will be considered later on.

The disturbances caused by myomata during pregnancy are not necessarily very great.

The increased size of the uterus will in many cases give rise to greater pain than in a normal pregnancy, but the inconvenience caused is seldom sufficient indication for operative interference. The induction of premature labor is hardly ever justified. It is a dangerous proceeding, unnecessarily sacrifices the child and leaves the tumors.

The treatment of fibroids during labor should also be governed by the greatest conservatism. In looking quite extensively over the literature on the subject, it appeared to me that very many cases have been reported in which an operative mania has resulted unfortunately for mother and child. Surgical interference is often absolutely necessary, however, and gives rise to many difficult and interesting conditions. Submucous fibroids can often be enucleated during labor. Cervical and subserous myomata behind the uterus, filling up the entire pelvis, may necessitate Cæsarian section.

Another great source of danger from fibroids is their predisposition to postpartum hæmorrhage. Interstitial tumors especially interfere with the symmetrical contractions of the uterus. Great watchfulness for many hours after the confinement and a thorough trial of all milder means from simple massage to tamponade of the uterus, will often obviate the necessity for graver procedures.

I should like to say a few words in conclusion about the fate of myomata in the puerperium. We have to deal here with two possible conditions—first, degeneration, and second, abscess formation through infection. The degeneration may be of a fatty, myxomatous or cystic nature. The latter is the most serious, because it is accompanied by a greater softening and breaking down of the tumor elements, thus offering a better field for infection. In my case there was no softening noticeable, and the degeneration was probably only of the fatty order, analogous to the involution of the uterus. Whether the myomata ever disappear entirely is very doubtful, and the question arises what course to pursue in cases similar to the one I reported. Shall we allow the patient to again encounter the same danger to life in a possible subsequent pregnancy? In my particular case I have felt justified in advising a laparotomy. It will be possible to enucleate all of the subserous fibroids and to preserve the functions of the uterus. The possibility to operate conservatively,

the age of the patient, thirty-five years, and her great desire to have children, justify an early operation.

In conclusion, I should again like to emphasize the following points:

1. Fibroid tumors do not predispose to any great extent to sterility.

2. Fibroids in pregnancy, during labor and in the puerperium represent dangerous complications in only a small number of cases.

3. Too active operative interference should be much guarded against.

4. The operation for the removal of the tumors should not be postponed until some months after confinement.

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- (4) *Winckel*, Volkmann's Klinische Vorträge, No. 98.
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THE CHANGES IN THE UTERINE MUCOSA DURING PREGNANCY, AND THE ATTACHED FŒTAL STRUCTURES.*

(Continued.)

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NATURE OF THE PROGRESSIVE CHANGES IN THE DECIDUA.

(Figs. illustrative of Decidua Vera and Decidua Serotina.)

Changes Due to Mechanical Results of Increase in Size of the Uterus.

It has been pointed out that the decidua reaches its highest point in development at an early period, viz.: some time between the second and third months. At the end of pregnancy it is evident that diminution in thickness has taken place. This is partly due, it seems to me, to the pressure of the uterine contents as well as to the gradual stretching which takes place in a direction parallel to the surface. In support of these statements is the arrangement of the gland-spaces parallel to the surface as pregnancy advances, the thinning of the trabeculæ of the spongy layer and the tearing across of many of them in the late months. The general tendency in the individual cells of the decidua to lie more or less parallel with the surface should also be mentioned. The loosening of different bundles of cells in the different parts of the compact layer may also be due to the stretching, though it may be partly due to a tendency to return to the pre-existing mucoid type of the interglandular tissue. To the same cause may be partly due the casting-off of the cells lining the glands.

Changes Non-Mechanical in Nature.

The degeneration and disappearance of the epithelium on the surface and of that lining the glands is now beyond dispute. The contention of Kossmann, Merttens, and others that it forms plasmodial

* Read before the Royal Society of Edinburgh and awarded the first Research Prize of the Royal College of Physicians of Edinburgh in 1896.

masses which burrow into the decidua and extend over the villi is utterly untenable.

The degeneration may be partly mechanical, *i. e.*, the cells may become flattened and separated as a result of the rapid increase in the interglandular tissue from formation of decidual cells, but it may also be due to the choking of the lymphatics by this increase and the consequent interference with the nutrition of the epithelium covering the decidua and lining those parts of the glands in the compact layer. The latter always degenerate before those in the spongy layer. Perhaps the epithelium in the deepest parts of the glands is mainly affected by the mechanical stretching.

As to the degeneration in the interglandular tissue there can be no doubt that the most marked change is the coagulation-necrosis, which gives rise to the progressive so-called hyaline or fibrinous transformation. These layers of fibrin in the serotina were first described by Nitabuch. As I have shown, this change may be found as early as the sixth week, and in the reflexa at an earlier period. It occurs chiefly in the superficial layer, though it extends here and there within the substance of the decidua. The supposition of Nitabuch and Langhans that it always marks the outer limit of the decidua cannot be held as strictly accurate, because occasionally the fibrin is separated from the surface by a strip of unaltered decidua. In general, however, the fibrin is the surface boundary, where it does exist, being in relation with foetal syncytium or with the villi.

I have pointed out the gradual extension of the fibrinous change with the advance of pregnancy and its occurrence in the walls of vessels.

It is of great interest to note that this marked degeneration does not take place in the vera, but only in the serotina and reflexa. Though undoubtedly after the early weeks changes are found in the vera of a degenerative nature, the masses of deeply-stained fibrin are not found. The explanation of this is not quite evident.

The first suggestion that occurs to one is that it must be related to some condition which is from an early period common to serotina and reflexa, but not to the vera, *i. e.*, the direct relationship to foetal structures. It is possible that the degeneration is marked because of some influence of the foetal epiblast. Hart and Gulland have pointed out that the decidua near the ends of the attached villi appear to be more degenerated than that further away.

Young and active villi do not come into contact with the vera because by the time the reflexa is absorbed and the chorion læve and vera come together, they are largely degenerated and useless. At that time also, the influence exerted by the rest of the chorion læve must be different from that which is in a younger and more active condition.

Another possibility must be considered, viz.: that the fibrin layer is in some way related to the blood in the intervillous space which bathes the surface of the decidua.

Steffeck has pointed out that part of the surface layer of fibrin may be formed from the blood. I have also noted this in cases of tubal gestation. I have found fibrin in the serotina in various stages of formation, containing, however, usually blood-corpuscles in its meshes, continuous with a subjacent layer of fibrin formed from necrosed decidual tissue. I have also pointed out that some of the fibrin-masses in the substance of the decidua were the result of blood-extravasations.

Another possible cause of the degeneration is the following: The compact layer is the seat of the earliest and most rapid growth of decidual cells. As a result of this growth, there is compression and obliteration of many of the lymph-spaces as well as of the capillaries which do not dilate to form large sinuses. In this way the nourishment of the superficial layers of the decidua, is undoubtedly interfered with. This condition is probably aggravated by the pressure of the uterine contents against the decidua. In the spongy layer, owing to the presence of numerous spaces, there is no danger of interference with the cells' nutrition.

It is possible, also, that the early rapid formation of large blood-sinuses in the compact layer may increase the pressure on surrounding cells.

Is There Any Fatty Degeneration?

I have described a condition of vacuolation in nuclei or in cell-matrices. The appearance is one which might easily be mistaken for fatty degeneration, but special staining reactions prove that it is not so. Gustav Klein, who has worked carefully at this point, holds that fatty changes are very rarely found in normal conditions, but not *infrequently* in pathological states. The old and long-taught view that the chief degeneration of the decidua is of a fatty nature cannot be held.



Fig. 121

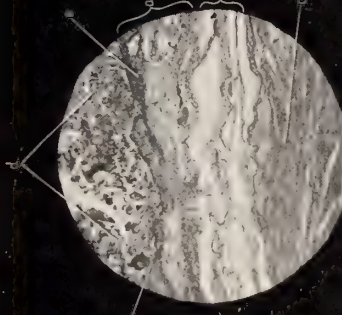


Fig. 122

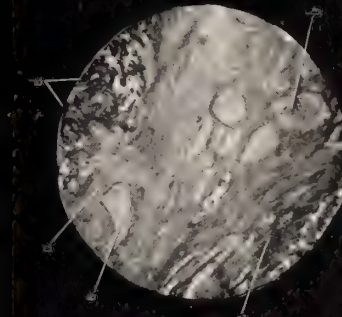


Fig. 123



Fig. 124

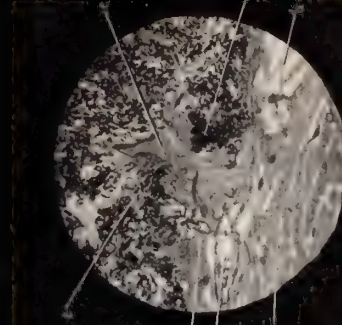


Fig. 125

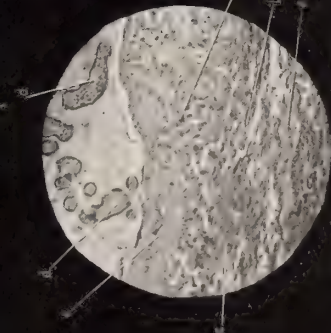


Fig. 126

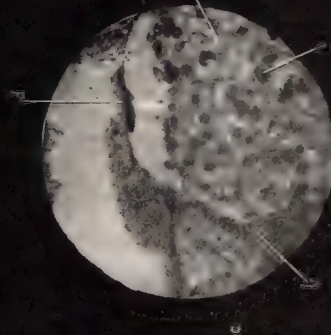


Fig. 127

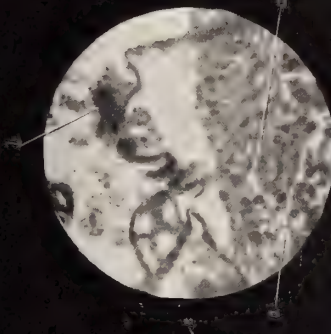


Fig. 128

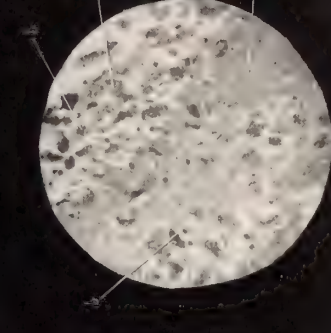


Fig. 129

FIG. 121. SECTION OF SEROTINA FROM 6-MONTHS' PREGNANT UTERUS. *a*, compact layer of decidua; *b*, spongy layer; *c*, muscle; *d*, villi. X. 30.

FIG. 122. ANOTHER FROM THE SAME. *a*, compact layer of decidua; *b*, spongy layer; *c*, muscle of wall; *d*, villi; *e*, hyaline degeneration in decidua. X. 35.

FIG. 123. ANOTHER FROM THE SAME. *a*, compact layer of decidua; *b*, gland space

in spongy layer; *c*, muscle; *d*, villi; *e*, blood-sinus. X. 35.

FIG. 124. ANOTHER FROM THE SAME. *a*, decidua cells of compact layer; *b*, degenerated decidua tissue; *c*, branching villus; *d*, part of large villus embedded in decidua; *e*, villus; *f*, blood-sinus in decidua. X. 40.

FIG. 125. ANOTHER SECTION FROM 6-MONTHS' PREGNANT UTERUS. *a*, compact layer of decidua serotina; *b*, spongy

layer; *c*, decidua hillock; *d*, muscular part of uterine wall; *e*, villi. X. 20.

FIG. 126. ANOTHER FROM THE SAME. *a*, large decidua cells of serotina; *b*, elongated cells, loosely arranged; *c*, degenerated patch in decidua, structureless; *d*, villi; *e*, capillary. X. 40.

FIG. 127. ANOTHER FROM THE SAME. *a*, large decidua cell of serotina; *b*, patch of hyaline degeneration; *c*, vacuolated condition of blended cell-substances; note various con-

ditions of nuclei; *d*, plasmodial mass on surface; it is extending into decidua at one point. X. 30.

FIG. 128. ANOTHER FROM THE SAME. *a*, degeneration in decidua tissue; *b*, large irregular crumpled mass of plasmodium stripped somewhat from surface of decidua. X. 300.

FIG. 129. ANOTHER FROM THE SAME. *a*, structureless, degenerated decidua; *b*, broken up tissue, cells degenerating. X. 300.

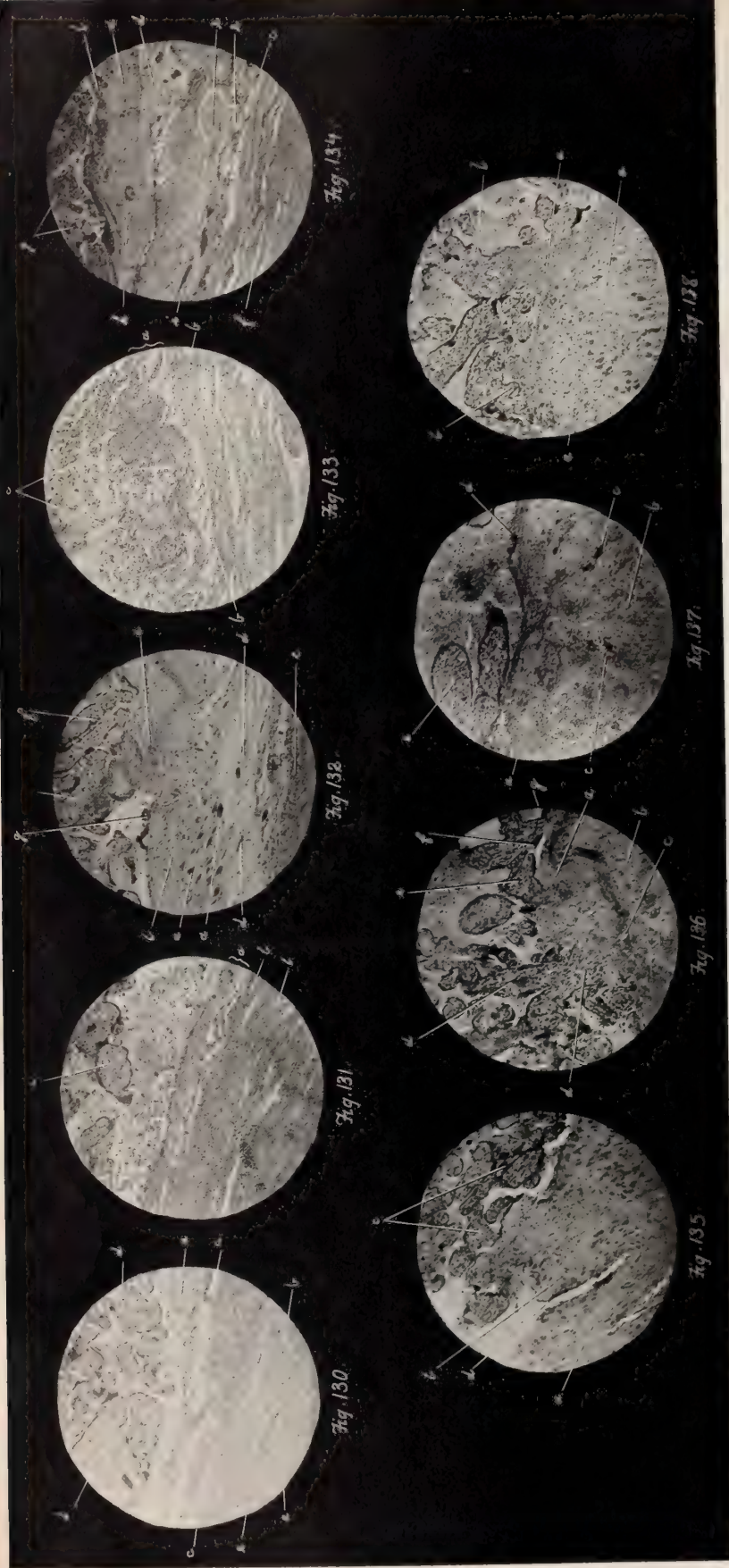


FIG. 130. SECTION OF SEROTINA FROM FULL-TIME UTERUS.

a, decidua; note thinness of layer; *b*, muscular part of uterine wall; *c*, villi; *d*, gland-space close to muscle; *e*, villi; *f*, plasmoidal mass in muscular part of wall. X. 80.

FIG. 131. ANOTHER FROM SAME. *a*, thin decidua serotina; *b*, muscular part of wall; *c*, villi. X. 80.

FIG. 132. ANOTHER FROM SAME. *a*, large decidua cells of serotina; *b*, dense hyaline-like tissue with remains of nuclei; *c*,

hyaline layer of degeneration in decidua; *d*, delicate trabecula of spongy layer; *e*, muscle of uterine wall; *f*, villi; *g*, plasmoidal mass on decidua; *h*, hyaline degeneration in connective tissue of villus attached to the decidua hillock. X. 80.

FIG. 133. ANOTHER FROM SAME. *a*, decidua; *b*, muscular part of wall; *c*, villi. X. 25.

FIG. 134. ANOTHER SECTION FROM FULL-TIME SPECIMEN.

a, compact layer of serotina; *b*, hyaline de-

generation at surface of decidua; *c*, junction of decidua and muscle; *d*, large sinus in decidua; in it are a few small pieces of plasmodium; *e*, muscle; *g*, villi of placenta; *h*, gland-space lined with low epithelium; *i*, blood-vessel. X. 80.

FIG. 135. ANOTHER FROM THE SAME. *a*, serotina; *b*, decidua hillock with villi attached; *c*, villi; *d*, remains of plasmoidal layer on surface. X. 80.

FIG. 136. ANOTHER FROM THE SAME. *a*, hyaline degeneration in serotina; *b*, degenerating decidua tissue; *c*, blood-vessel; *d*, villus-stem attached to decidua; its core ap-

pears to be continuous with decidua tissue; *e*, villus attached to decidua; hyaline degeneration is extending into it; *f*, remains of epithelial layer; *g*, another point of attachment of villus on surface; *h*, villus. X. 80.

FIG. 137. ANOTHER FROM THE SAME. *a*, hyaline degeneration in serotina; *b*, partial degeneration; some nuclei are still seen; *c*, small mass of plasmodium; *d*, plasmoidal mass on surface; *e*, villus. X. 80.

FIG. 138. ANOTHER SECTION OF SAME. *a*, degenerated serotina; *b*, large villus, attached to decidua at several points. X. 80.

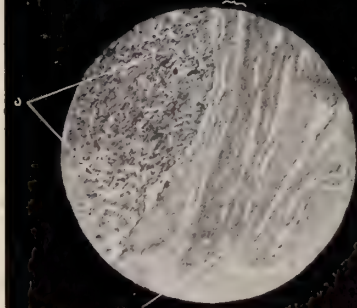


Fig. 139.

FIG. 139. ANOTHER FROM THE SAME.
a, serotina; b, muscle of uterus; c, villi of placenta. X. 20.

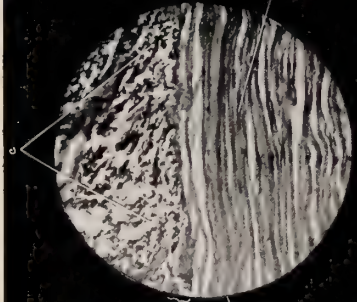


Fig. 140.

FIG. 140. ANOTHER FROM THE SAME.
a, serotina; b, muscle of uterine wall; c, villi. X. 20.

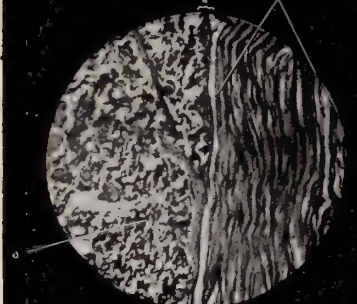


Fig. 141.

FIG. 141. ANOTHER FROM THE SAME.
a, serotina; b, muscle; c, villi. X. 20.

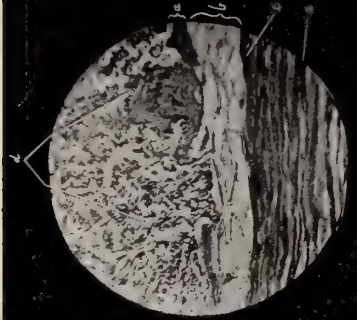


Fig. 142.

FIG. 142. ANOTHER FROM THE SAME.
a, serotina; b, muscular part of wall of uterus; c, villi; d, point at which complete absorption of decidua has occurred. X. 20.

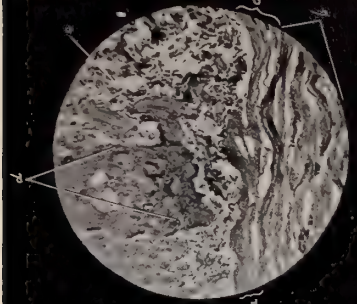


Fig. 143.

FIG. 143. ANOTHER FROM THE SAME.
a, compact layer of serotina; b, spongy layer of placenta; c, muscle; d, villi; e, decidua hillock. X. 20.

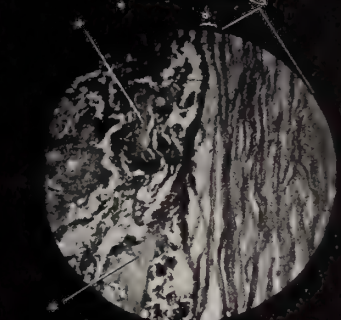


Fig. 144.

FIG. 144. ANOTHER FROM THE SAME.
a, compact layer of serotina; b, spongy layer; c, muscle; d, villi. X. 20.

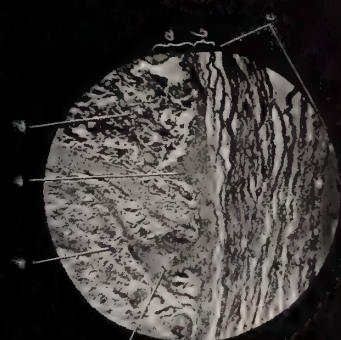


Fig. 145.

FIG. 145. ANOTHER FROM THE SAME.
a, serotina; b, muscular part of uterine wall; c, villi. X. 20.

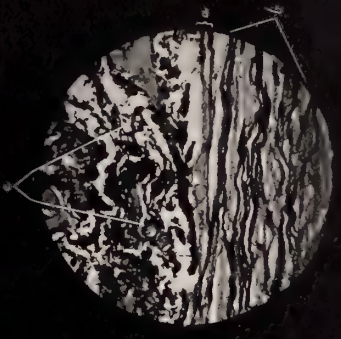


Fig. 146.

FIG. 146. ANOTHER FROM THE SAME.
a, serotina; b, muscle; c, villi of placenta; d, villi. X. 20.



Fig. 147.

FIG. 147. ANOTHER FROM THE SAME.
a, serotina; b, muscle; c, villi of placenta; d, villi. X. 20.

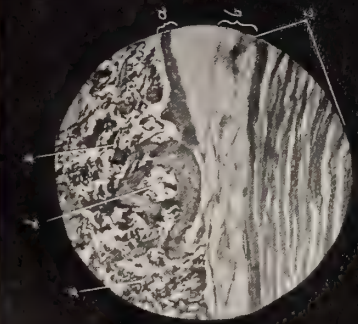


Fig. 148

FIG. 148. ANOTHER FROM SAME.
a, compact layer of serotina; *b*, spongy layer; *c*, muscle; *d*, blood-sinus in decidua hillock; *e*, villi. X. 20.



Fig. 149

decidual cells; *c*, large arc of hyaline degeneration; *d*, villus; *e*, remains of plasmodium on surface. X. 80.

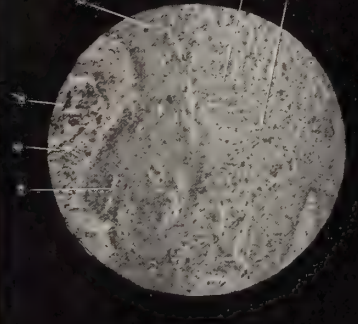


Fig. 150

in outline and with large nuclei. Note the spaces between the cells or in the inter-cellular material. X. 300.

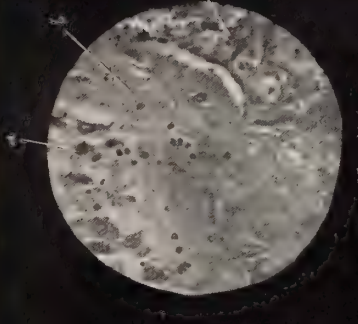


Fig. 151

FIG. 151. ANOTHER FROM THE SAME.
 Serotina with decidua cells in various stages of degeneration. X. 300.

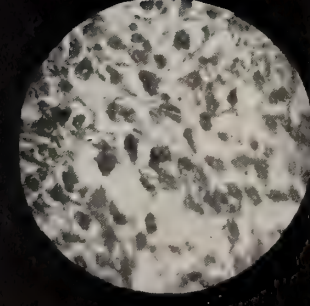


Fig. 152

FIG. 149. ANOTHER FROM SAME.
a, serotina, almost entirely of spongy texture; *b*, muscle; *c*, villi. X. 20.

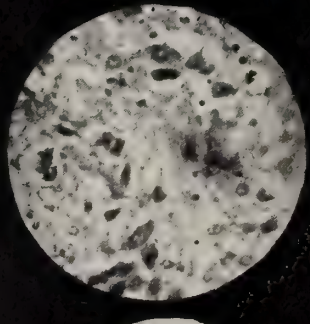


Fig. 153

FIG. 150. ANOTHER FROM THE SAME.
 compact layers of serotina; *b*, cluster of leucocytes; *c*, spongy layer; *d*, junction of spongy layer and muscle; *e*, muscular part of wall; *f*, villi. X. 80.

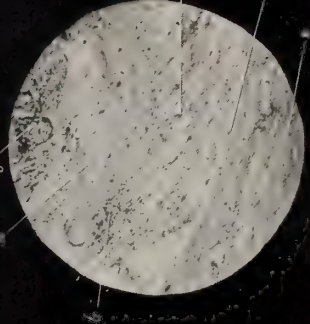


Fig. 154

FIG. 153. ANOTHER FROM THE SAME.
 Serotina with decidua cells in various stages of degeneration. X. 300.

FIG. 154. ANOTHER FROM THE SAME.
a, compact layers of serotina; *b*, cluster of leucocytes; *c*, spongy layer; *d*, junction of spongy layer and muscle; *e*, muscular part of wall; *f*, villi. X. 80.

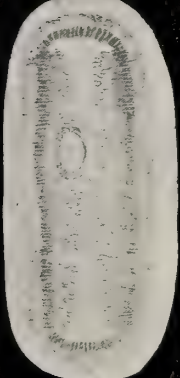


Fig. 251

FIG. 251. REICHERT'S DIAGRAM TO SHOW RELATION OF THE OVUM TO THE DECIDUA IN HIS EARLY PREGNANCY CASE.
 The ovum has just been encapsuled.

Absorption of Decidua.

Absorption and gradual disappearance of some parts of the decidua, especially of the degenerated parts, takes place in all probability throughout pregnancy. The absorption may take place directly into the maternal circulation or by the agency of leucocytes. But there can be little doubt that it is also brought about by the agency of the foetal epiblast, *i. e.*, by the original layer of the blastocyst which is applied early to the decidua, and which is met with throughout pregnancy as the irregular masses of syncytium attached to the surface as well as those which extend into the substance of the decidua; also through the same material on the ends of the villi attached to the maternal tissues. This suggestion has also been brought forward by me in my work on Ectopic Pregnancy. The trophoblastic nature of the outer epiblastic layers of the ovum, which Hubrecht so clearly showed in the case of the hedgehog must be considered well-established. It has also been demonstrated in the case of other animals.

But degeneration is not the only change which is met with in the decidua during pregnancy. Were it not that *pari passu*, some new formation of tissue goes on, it seems to me certain that as a result of the enormous increase in the area of the uterine wall from the time when the decidua reaches its highest development (*viz.*: between the second and third months), the stretching and degeneration and absorption of the decidua would lead to its entire disappearance before the end of pregnancy. Indeed, I have shown that at full time, the serotina, in certain parts has nearly or entirely disappeared by full time; probably at these points the decidua was thin in the beginning, and the internal cell-activity was not sufficient to oppose the destructive agencies.

In my description of the minute changes at different periods I have pointed out the presence in the decidua of irregularly-distributed groups of cells which were evidently more active than surrounding cells. Gustav Klein has made the same observation, and to these he has given the name of "*Ersatz-zellen*," believing that they are mainly instrumental in the reformation of the mucosal cellular tissues *post partum*. They may share in this process, but I am inclined to regard them as mainly instrumental in renewing to a certain extent the wear and tear in the decidua during pregnancy. It is

necessary that there be this renewal to explain the considerable amount of decidua found at full time.

I have also pointed out the tendency in large cells in certain parts of the decidua, during the late months, to become gradually smaller and to form a looser arrangement of anastomosing cells, very like the embryonic inter-glandular tissue of the non-pregnant state. The chief difference is in the larger size of the nucleus and in the stronger staining reaction of the matrix. It is possible, as I have before stated, that in some parts the looser arrangement of cells may be caused by the stretching which the decidua undergoes.

(To be continued.)

A MONSTROSITY WITH SACROCOCCYGEAL CYST.*

BY CHARLES JEWETT, M.D., BROOKLYN.

J. G., German, twenty-five years of age, three-para, was admitted to the lying-in service of the Long Island College Hospital January 28, 1897. She had been twenty-four hours in labor. Her physician's attempts at delivery had been unsuccessful. The uterus was in a state of tonic contraction. The child was dead. The cord and the right arm were in the vagina, the arm extremely cedematous. Decapitation was performed by Dr. H. F. Jewett but the trunk could not be extracted. On examination with the hand in the uterus he found the cause of obstruction in a large fluctuating tumor. The tumor was perforated and evacuated through the chest wall and extraction easily effected. The content of the tumor was a slightly turbid, light brownish liquid, the quantity of which was estimated at about a gallon. The mother recovered with little or no fever.

The tumor proved to be a simple cyst, the relations of which are shown in the accompanying figures. Fig. 1 shows the external appearance of the tumor. Fig. 2, a frozen section of the same, made after filling the cyst with gelatin. The cyst is bilobed. One lobe occupied the abdominal cavity; the other projected downward through the pelvis, pushing the integument of the pelvic floor before it. The rectum encircled the posterior and lower aspect of the cyst

* Read before the New York Obstetrical Society, March 16, 1897.



Fig. 1. Monstrosity. (From photograph.)

wall. The length of the monstrosity was 42 centimeters; length of cyst, 24.1 centimeters. The greatest antero-postero diameter of cyst was 17.5 centimeters.

A frozen section of the specimen in the vertical mesial plane and subsequently a careful dissection was made by Mr. A. H. Heppner, of the medical class. The findings were as follows: The wall of the intra-abdominal portion of the cyst was dense, white, fibrous, non-vascular and about three millimeters in thickness. The entire wall could easily be separated from the surrounding structures. It reached the diaphragm, displacing it and the thoracic as well as the abdominal viscera upward. The kidneys were of normal size, pale and flabby. The ureters were slightly dilated at their origins, but narrowed down to thin impervious cords below. Their lower extremities were lost in the sac wall. The urethra was impervious at the upper end, at the sac wall, but open below. The testicles were in the scrotum. The wall of the pelvic portion of the cyst was about two millimeters in thickness, except at the base, where it was reduced to one millimeter. The thinned out muscular structures of the pelvic floor could be traced over a part of it. The rectum ran over the posterior and inferior aspect of the cyst wall, terminating near the base of the tumor anteriorly. Everywhere except at the base the cyst wall was separable from the over-lying structures. Here it blended intimately with the displaced pelvic floor. The structures in the latter region were distinctly vascular. From this region apparently the tumor took its origin.

Professor J. M. Van Cott, Jr., who kindly examined portions of the cyst wall and the coverings of its inferior segment, reports the following microscopic findings: "The material reveals nothing but connective tissue with the usual supply of blood vessels and lymphatics, excepting the portions removed from the covering of the inferior portion of the cyst, which is composed of two layers, viz.: one of subcutaneous areolar tissue, and the other, outer, layer of the typical structures of the skin, which shows some atrophy, due undoubtedly to distention. There are no morphologic characters to indicate any glandular structure; and, from a purely histologic standpoint, the conclusion is inevitable that this cyst could not have resulted from retention of the products of a secreting epithelium."

Congenital tumors of the size presented in this specimen are usually teratomata, foetal inclusions (Hirst). Such, however, is not the



Fig. 2. A Frozen Section of the Same, made after filling the Cyst with Gelatin.

character of the one before us. The cyst contained no foetal structures.

The cyst is possibly a degeneration of Luschka's gland, a small arterial gland situated at the tip of the coccyx anteriorly.

Heschl (*Österreich. Zeitschr. f. Prakt. Heilkunde*, No. 14, 1860), is of the opinion that this gland is generally the point of origin of congenital cystic tumors springing from the perineal region.

Dr. H. P. de Forrest, who kindly searched the literature of the subject found nothing precisely corresponding to the tumor which I present. Klebs (*Virchow's Archiv.*) describes a sacral congenital cystoma which was situated in the perineum and had the size of two fists. The anus was pushed forward and the sacral region crowded back. The tumor extended into the true pelvis. It was adherent to the skin. There were several constrictions of the cyst. On the side nearer the skin were two small bodies resembling Luschka's gland and of the same structure. Near the coccyx there were two cartilaginous plates very like vertebral cartilages. Notwithstanding the intimate associations with Luschka's gland Klebs believed this tumor in this case sprang from the notochord.

The cyst in my case is apparently not of spinal origin.

TUBULAR DRAINAGE THROUGH THE VAGINA FOR CHRONIC CYSTITIS, WITH REPORT OF CASES.*

BY NATHAN G. BOZEMAN, PH.B., M.D., NEW YORK.

The field of work in gynæcology limited itself for a long time to operations performed inside the vagina, and it was thought in those days a great achievement to be able to expose to the sight and touch the seat of surgical diseases there. But not satisfied now with this limited field, the gynæcologist has extended his work to the pelvis, through an opening in the abdominal wall, and has attained marvelous results, and still greater advances, to my mind, have been made by him in perfecting operations on the diseased pelvic organs by the old route, thus penetrating into the pelvic cavity. When drainage enters into the after-treatment of such cases you all must

* Read before the Woman's Hospital Society, April 13, 1897.

admit the advantage is decidedly in favor of the vaginal method. The two ways then of attacking the maladies of the pelvic viscera, which are amenable to surgical treatment being perfected, we ask ourselves which is best whether we operate from above or from below. For the purposes of this paper I shall limit my remarks to the operation of opening the bladder from the vagina for the cure of chronic cystitis, drainage of that viscus being concomitant and essential thereto. There are many advocates, it is true, of the superpubic operation, but in my experience the former has been so satisfactory that I have not thought of doing any other.

Colpo-cystotomy and colpo-uretero-cystotomy are both simple operations in themselves, and when followed up by efficient drainage whereby the patients are relieved of the disagreeable dribbling of the urine, and an empty bladder is maintained, which gets physiological rest, a great boon is assured to women worn out by months and sometimes years of constant pain, vesical tenesmus, and loss of sleep, and usually broken down in health from these causes alone. I have opened the bladder thirteen times in well-selected cases, and have followed them up as closely as I could, perfecting in every instance the drainage, and I have sufficient reasons to believe that my patients have been relieved of the symptoms, many purely functional, for which the operation was done. But the cystitis which existed in five has been cured. One of these cases recovered from a coexisting pyelitis, and one patient suffering from pyelitis and pyonephrosis was benefited, but I must admit that she deferred having the bladder opened until it was too late, and when it was done she would not submit to any further treatment, and as a last resource an operation on the kidney was urged, but she refused and left the hospital and has since died. This case taught me that early operation for chronic cystitis, with drainage of the bladder, diminishes the probability of the extension of the inflammation to the ureters and the pelvis of the kidney, for I had treated her only six months previous to her coming to the hospital for an irritable bladder and slight cystitis. Neglected cystitis developing in persons affected with spinal cord disease such as tabes dorsalis, I have found also results disastrously. The following history of the case of pyelitis which was cured, is typical of this class of cases. Mrs. C., aged twenty-six, was admitted to St. Francis Hospital February 29, 1894. She had been under treatment for a year or more in the medical

wards of several hospitals for nervous troubles without receiving any benefit. When first seen she was very much emaciated, having a continuous temperature ranging as high as 104° and 105° , with chills and a rapid and feeble pulse. The urine was loaded with pus, and she complained of constant pain in the right groin extending up into the lumbar region and down the right leg, and a pressing desire to empty the bladder frequently was present. Right colpo-uretero-cystotomy was performed for her relief, and the ureter exposed, out of which pus was seen to flow with the urine. A small flexible catheter was passed into the pelvis of the kidney, which was washed out through it with a solution of bichloride of mercury 1 to 20,000. This was repeated several times during the next two or three weeks, and continuous irrigation of the bladder and vagina kept up until the wound in the bladder had cicatrized, when a vesico-vaginal drainage support was introduced. She began to improve immediately after the operation. The temperature gradually subsided, and very soon she was able to get out of bed, but her gait was distinctly that of a person suffering from locomotor ataxia. She left the hospital in about a month, wearing a drain. I had opportunities during the following eighteen months to examine her; she had several relapses, but when last seen the bladder seemed healthy. In October, 1895, Dr. A. L. Tuttle, of Bridgeport, wrote me that she was in the hospital there, and he asked if it was advisable to attempt to close the bladder.* The following is a case of cystitis, with hæmaturia, which was referred to me at St. Francis' Hospital by Dr. E. L. Bull, of Jersey City, who has kindly furnished me with the following history:

Mrs. T. aged fifty. For several years, eight or nine, before operation suffered severe pain in lower part of back and bearing-down pain in lower part of abdomen and frequent desire to pass her water. Had to get up every few minutes at night to pass water and could only pass a little at a time, never got a good night's sleep. The bearing-down pains were always worse on exertion and if she walked a few blocks from home the bearing-down pains and desire to pass water were so severe she could hardly get home. The pains were like labor pains and as severe. When she would get home would have to get on her hands and knees to pass her water and then could pass only a little at a time—would have to remain in that position for half an hour at a time before she could empty bladder. The urine at this time was very bloody, and it gave her

*Since the reading of this paper the Doctor informs me that the fistula has been closed, the cystitis having been cured.—AUTHOR.

severe smarting pain to pass it. Chamber half full of blood (as she expressed it).

After one of these attacks would be weak and sick for several days. Always had to remain in bed the following day. The pains were always relieved for a time after emptying the bladder.

After first operation, while wearing instrument symptoms were all relieved.

After second operation was cured, has had no trouble with her bladder and is in good health.

I performed colpo-cystotomy, removing a circular segment from the vesico-vaginal septum about the size of a silver quarter of a dollar, finding papillary growths on the vesical mucous membrane, also beyond the incision there were similar growths. Continuous irrigation was kept up after the operation, and she wore a drain with comfort for more than a year, and there was no further return of the bleeding. I closed the opening with one application of the button suture early in January of this year. The histories of the next two cases I report just as they have been sent to me: "Mrs. E. N., aged thirty-three, married; admitted to Bayonne Hospital October 11, 1893. Discharged October 25, 1893. Result good. Patient has history of long-standing cystitis, with extreme hypertrophy and sensitiveness of bladder. Operated on by Dr. N. G. Bozeman October 12th, making a vesico-vaginal fistula. The bladder was drained and irrigated by Dr. Bozeman's continuous irrigator. Patient improved rapidly, and on the thirteenth day was fitted with Dr. Bozeman's urinal and discharged the following day." This patient has been coming to see me two or three times a year since. She is so comfortable that she has not made up her mind to have the opening closed, but I expect to do it soon. Dr. George H. Sexsmith, of Bayonne, N. J., referred the next case to me, and has kindly written up the history.

Mrs. J. H. W., age fifty:

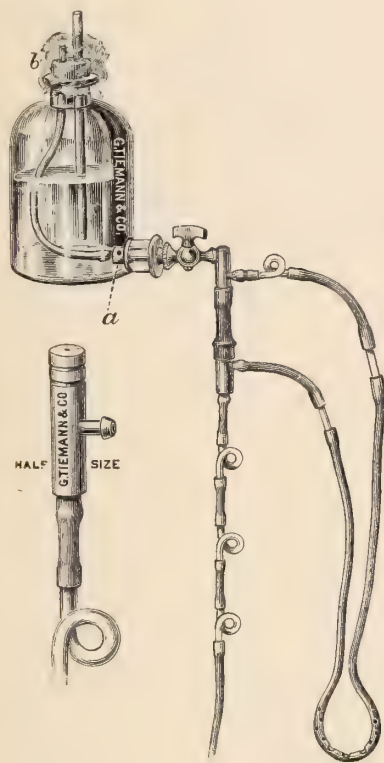
Mrs. J. H. W., naturally of a very nervous temperament, mother of two children, had enjoyed good health generally until at the age of forty-four years (at which time she weighed 204 pounds), when she developed a general nervous condition, having all the symptoms of a patient suffering from neurasthenia in an exaggerated form. Most prominent was persistent vomiting for from three to six days at a time which nothing would control but morphine. When the vomiting was not present she suffered with jogging pains in the limbs and body present most of the time when vomiting was absent and always absent when vomiting was present. There was drooping of lid of right eye for first half of first year of patient's sickness. Noticed about the end of first year a desire for frequent

urination both night and day, which continued until at end of second year when there was partial incontinence of urine. Urine at this time normal reaction and Sp. Gr. no albumen or sugar, color light, considerable mucus, odor decided. Patient when not in bed from weakness, vomiting, or pain, was constantly walking about the house, unable apparently to control herself on account of, as she described it, a crawling sensation under the skin of the body. Skin of the body was extremely hyperæsthetic, the slightest touch causing great pain. From May, 1891, patient consulted and was treated by twelve different physicians and specialists, all making same diagnosis—neurasthenia, but none being able to relieve the symptoms. From time to time slight improvement until September, 1896, patient was very low, weighing eighty-three pounds in place of two hundred and four pounds as in the beginning. She was still having the pains and vomiting, and almost complete incontinence of urine which was loaded with pus and mucus, odor very disagreeable. Morphine had been used from time to time to control pains, vomiting, etc., but no habit had been formed. From the beginning of patient's illness menstruation was regular except for last eighteen months when menses came on every two to six months. Patient states that she was treated for retroflexion when about twenty-five years old, but had never suffered any appreciable symptoms from the retroflexion. This condition still exists; a retroflexion or twisting of the womb on itself. Also moderate amount of falling uterus being bound down with adhesions.

In September, 1896, patient consulted Dr. Bozeman, was operated on, from which time there was a very decided improvement. Was able in less than two weeks to eat three meals a day with no discomfort, this she had not been able to do for over five years. All the symptoms lessened, patient could read and sew, was able to sleep most of the night; before operation never slept for more than one hour at a time, and many nights not at all. There have been several apparent relapses in her condition, vomiting, pains, etc., since operation, but lasting only for a short time and growing less intense each time. Patient has gained thirty pounds in six months, goes out for a walk nearly every day. Urine practically normal except for odor.

The operation for making an opening in the bladder I perform according to the practice of my father. The patient is placed in the supported knee-chest position, and the vesico-vaginal septum is distended with Bozeman's dilating speculum. After filling the bladder with a boracic acid solution a counter-pressure loop is passed through the urethra and pressed up against the bladder wall, which is then pierced completely through with a barbed spear or tenaculum. A crescentic incision is made with a sharp-pointed knife; this is continued with scissors around the spear or tenaculum in a complete circle. The mucous membrane of the bladder is approximated with catgut to that of the vagina to control bleeding. When this is done the circular aperture should easily admit the index finger. A per-

forated drainage tube, made self-retaining by means of a stiff wire, is introduced in the manner of a pessary into the vagina, the two ends extend out for two or three inches. When the patient is put to bed they are connected with the irrigator, and a current of air and water is passed through more or less constantly until the wound has cicatrized. The system of continuous irrigation and drainage I have devised and perfected describing it first in June, 1889, and afterward in May, 1893, in the *New York Medical Journal*.



Air and Water Irrigator
and Drain.

The vesico-vaginal drainage support referred to is that which Dr. Nathan Bozeman devised and published in the Transactions of the Ninth International Medical College, 1887. A few improvements have been made in it since then, such as introducing a tube under the neck which extends to the bottom, so that the urine collected in it can siphon out when the patient is lying down. Also the valve, which is found in the ordinary soft-rubber urinal, has been replaced by a rubber tube extending nearly the whole length of the bag, which offers no obstruction to the urine flowing in, and prevents it escaping when the bag is tilted up.

The objections urged to an artificial vesico-vaginal fistula for drainage are mainly *three*, which I shall attempt to answer:

1. The tendency for the opening to close. When a circular opening is made in the manner I have described it is impossible for

it to close. It may contract to a small size, when one or two incisions may be made and it can be dilated by the finger. The drainage instrument tends to keep it patulous.

2. The discomfort caused by the involuntary escape of urine. The use of Dr. Nathan Bozeman's drainage support obviates this. Contrivances of more or less crude construction have been used for the purpose, but I am convinced that after a trial of more than ten years that it is based on true scientific principles, and it is most efficient. I leave you to judge for yourselves of the utility and completeness of the system of continuous irrigation and drainage which I shall have the pleasure of demonstrating to you.

3. The difficulty of closing the fistula when it becomes necessary. My experience with Bozeman's button suture operation for fistula in thirteen cases which I have operated on has led me not to dread the ultimate result. On the thirteen fistulas I have operated sixteen times closing ten of them—eight at the first operation—three only have been operated on the second time resulting in two closures. The classes of cases have been varied, and some have offered more than usual difficulties.

Five were vesico-vaginal, four were urethro-vesico-vaginal, three were uretero-vesico-vaginal, and one was an utero-vesico-vaginal fistula.

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EDITORIAL.

THE DISPENSARY AND HOSPITAL SYSTEM.

We are likely to hear little of this great abuse of charity and this imposition upon the medical profession during the next few months. Owing to the very general suspension of Medical Society sessions and the very general exodus, at least here in the East, of both doctors and patients to the country, this subject will lie fallow during the summer. There is no question, however, that with the return of the working season, in the Fall, it will be resumed and the battle taken up with fresh vigor and fought to a finish, *i. e.*, till the abominable system, which the selfish cupidity of a few medical men and the indifference to the rights of others; on the part of the lay Boards of hospitals and dispensaries, inaugurated and still maintained, has

been stamped out. It will probably take several years to accomplish this result but, as the intolerable burden which this system forces upon medical men becomes heavier and heavier each year and must so continue, it will always itself provide fresh fuel for its final destruction.

In this one instance alone—an example of many of like needs—where the importance of influencing just legislation is so apparent, do we see the necessity of a *great* medical press in this country. Does any one suppose, for instance, that the Governor of this State would have dared to refuse to sign the broad and equitable bill, passed by the Legislature last month for the regulating of dispensaries, if we possessed in this State even one great medical journal, free from trade influences and dependent only for its support upon its subscribers so that it might be recognized as the mouthpiece of public opinion? Would the Governor of Missouri have contemptuously defied the protests and rights of the entire profession in that State by giving all the public appointments to homœopaths and eclectics, if there had existed there a medical press sufficiently untrameled by commercial interests boldly to tell the Governor his duty, while carrying with its advice the acknowledged *vote* of medical public opinion? These are but isolated instances in which the rights of medical men have been flouted by those in power (whether in the State or in our own ranks) hitherto practically with impunity, because the greed of selfish interests found only an ununited and voiceless profession to oppose it.

Recently, however, the flagrancy of the hospital and dispensary abuse has aroused such intense indignation in the majority of the profession that, for almost the first time in its history, it has united spontaneously in a common cause, which not only assures success in the reformation of this particular abuse but is a happy augury of a permanent union of sentiment in resistance to personal greed and in defense of the common good.

IN MEMORIAM:

WILLIAM THOMPSON LUSK, A.M., M.D., LL.D.,

Professor of Obstetrics and Diseases of Women in the Bellevue Medical College; Consulting Physician to the Maternity Hospital; Visiting Physician to the Emergency Hospital and the Catholic Orphan Asylum; Gynæcologist to Bellevue Hospital and to St. Vincent's Hospital; Honorable Fellow of the Edinburgh Obstetrical Society; Corresponding Fellow of the Obstetrical Societies of London, Paris, Leipsic, and of the Academy of Medicine, Paris; Member of the American Gynæcological Society, the New York Academy of Medicine, and of the New York Obstetrical Society, etc.

It is with profound regret that we chronicle the death, on June 12, of Dr. Lusk. Although he had perceptibly aged both mentally and physically within the past two or three years, the change was not sufficiently evident to alarm his friends and many admirers nor to prepare them for his sudden taking off. Not having yet completed sixty years of life and having always been of spare build, he would have appeared the least likely victim of apoplexy.


Dr. Lusk was born in Demerara, British Guiana, but came with his family at an early age to Norwich, Conn., where his early life, or until he entered Yale College, was passed. For this reason his birthplace is usually ascribed to this town. After leaving college, he spent several years in Germany and there as well as, later, in Edinburgh, Paris and Vienna, he laid the foundation of great scientific erudition.

He graduated, however, in Bellevue College, in this country, where he held for so many years the Professorship of Obstetrics. Dr. Lusk was not preëminent as a gynæcologist, which specialty he only practised later in life, but as an authoritative teacher in the art and science of obstetrics we doubt if he had an equal in this country, while his fame placed him among the foremost obstetricians of the world. No text-book of this century is more highly considered than his *Science and Art of Midwifery* which, having passed through many editions both in this country and in Europe, is still considered a standard work and a classic of literary medicine.

Dr. Lusk has the enviable distinction, in dying, to leave an unique place which will remain for many years unfilled. There are so few men now-a-days who, dying, are not quickly forgotten! The life-work of Dr. Lusk in obstetrics will live, long after his personality, as in the natural order of things, has become merely a memory to his contemporaries.

In the February number of this JOURNAL for the year 1892, we published a complete sketch of Dr. Lusk's career, in which most of the facts were very kindly furnished us by himself. This sketch will be found in the *Series of Eminent Living Gynæcologists and Obstetricians of America* on page 127 of that number and we refer our readers to it as the interesting and profitable history of a man who won great success by hard, constant and meritorious work.

We reproduce as a frontispiece to this number a portrait of Dr. Lusk, from an excellent photograph taken a few years ago.



CORRESPONDENCE.

Study of the American Medicinal Flora.

NEW YORK COLLEGE OF PHARMACY, N. Y., June 5, 1897.

To the Editor of the American Gynecological and Obstetrical Journal:

SIR—Will you kindly publish in your journal the inclosed communications, in the interest of the work undertaken by this Commission.

The Sub-Commission of the Pan-American Medical Congress appointed to study the medicinal plants of the United States has entered into an association with the Smithsonian Institution for that purpose. The attention of our readers is called to the respective circulars issued by these organizations, which we print below:

SMITHSONIAN INSTITUTION,
WASHINGTON, D. C., May 28, 1897.

DEAR SIR: The Smithsonian Institution has undertaken to bring together all possible material bearing on the medicinal uses of plants in the United States. Arrangements have been made with a body representing the Pan-American Medical Congress, the Sub-Commission on Medicinal Flora of the United States, to elaborate a report on this subject, and the material when received will be turned over to them for investigation.

The accompanying detailed instructions relative to specimens and notes have been prepared by the Sub-Commission.

All packages and correspondence should be addressed to the Smithsonian Institution, Washington, D. C., and marked on the outside *Medicinal Plants for the United States National Museum*.

Franks which will carry specimens, when of suitable size, together with descriptions and notes, free of postage through the mails, will be forwarded upon application. Should an object be too large for transmission by mail, the sender is requested, before shipping it, to notify the Institution, in order that a proper authorization for its shipment may be made out.

Instructions Relative to Medicinal Plants.—The Pan-American Medical Congress, at its meeting, held in the City of Mexico in November, 1896, took steps to institute a systematic study of the American medicinal flora, through the medium of a General Commission and of special Sub-Commissions, the latter to be organized in the several countries. The Sub-Commission for the United States has been formed, and consists of Dr. Valery Havard, U.S.A., Chairman; Mr. Frederick V. Coville, Botanist of the United States Department of Agriculture; Dr. C. F. Millspaugh, Curator of the Botanical Department of the Field Columbian Museum, Chicago; Dr. Charles Mohr, State Botanist of Alabama; Dr. W. P. Wilson, Director of the Philadelphia Commercial Museums, and Prof. H. H. Rusby, of the New York College of Pharmacy. This Sub-Commission solicits information concerning the medicinal plants of the United States from every one in a position to accord it. The principal points of study are as follows:

1. Local names.
2. Local uses, together with historical facts.
3. Geographical distribution, and degree of abundance in the wild state.
4. Is the plant collected for market, and if so,
 - (a) At what season of the year?
 - (b) To how great an extent?
 - (c) How prepared for market?
 - (d) What is the effect of such collection upon the wild supply?
 - (e) What price does it bring?
 - (f) Is the industry profitable?
5. Is the plant, or has it ever been, cultivated, and if so, give all information on the subject, particularly as to whether such supplies are of superior quality, and whether the industry has proved profitable.
6. If not cultivated, present facts concerning the life history of the plant, which might aid in determining methods of cultivation.
7. Is the drug subjected to substitution or adulteration, and if so, give information as to the plants used for this purpose.

While it is not expected that many persons will be able to contribute information on all these points concerning any plant, it is

hoped that a large number of persons will be willing to communicate such partial knowledge as they possess.

It is not the important or standard drugs alone concerning which information is sought. The Sub-Commission desires to compile a complete list of the plants which have been used medicinally, however trivial such may be. It also desires to collect all obtainable information, historical, scientific, and economic, concerning our native and naturalized plants of this class, and, to that end invites the coöperation of all persons interested. Poisonous plants of all kinds come within the scope of our inquiry, whether producing dangerous symptoms in man, or simply skin inflammation, or, as "loco-weeds," deleterious to horses, cattle, and sheep. In this respect, the general reputation of a plant is not so much desired as the particulars of cases of poisoning actually seen or heard from reliable observers. It is believed that much interesting knowledge can be obtained from Indians, Mexicans, and half-breeds, and that, consequently, Indian agencies and reservations are particularly favorable fields for our investigation. Such knowledge will be most acceptable when based upon known facts or experiments.

In order to assist in the study of the habits, properties, and uses of medicinal plants, the Sub-Commission undertakes to furnish the name of any plant-specimen received, together with any desired information available.

Owing to the diversity in the common names of many plants it will be necessary for reports, when not furnished by botanists or others qualified to state the botanical names with certainty, to accompany the same with some specimen of the plant sufficient for its identification. While the Sub-Commission will endeavor to determine the plant from any portion of it which may be sent, it should be appreciated that the labor of identification is very greatly decreased, and its usefulness increased, by the possession of complete material; that is, leaf, flower, and fruit, and in the case of small plants the underground portion also. It is best to dry such specimens thoroughly, in a flat condition under pressure, before mailing. While any convenient means for accomplishing this result may be employed, the following procedure is recommended: Select a flowering or fruiting branch, as the case may be, which, when pressed, shall not exceed sixteen inches in length by ten inches in width. If the plant be a herb two or three feet high, it may be

doubled, to bring it within these measurements. If it possess root leaves, some of these should be included. Lay the specimen flat in a fold of newspaper and place this in a pile of newspapers, carpet felting, or some other form of paper which readily absorbs moisture, and place the pile in a dry place, under a pressure of about twenty to thirty pounds, sufficient to keep the leaves from wrinkling as they dry. If a number of specimens are pressed at the same time, each is to be separated from the others by three or four folded newspapers or an equivalent in other kinds of paper. In twelve to twenty-four hours these papers will be found saturated with the absorbed moisture, and the fold containing the specimen should be transferred to dry ones. This change should be repeated for from two to five days, according to the state of the weather, the place where the drying is done, the fleshiness of the specimens, etc. The best way to secure the required pressure is by means of a pair of strong straps, though weights will do. The best place for drying is beside a hot kitchen range. When dry the specimens should be mailed between card-boards or some other light but stiff materials which will not bend in transit.

It is a most important matter that the name and address of the sender should be attached to the package, and that the specimens, if more than one, should be numbered, the sender retaining also specimens bearing the same number, to facilitate any correspondence which may follow. The Sub-Commission requests that, so far as practicable, all plants sent be represented by at least four specimens.

(Signed)

H. H. RUSBY, M.D.,

Chairman of the General Commission, New York College of Pharmacy.

VALERY HAVARD, M.D.,

Chairman of the Sub-Commission, Port Slocum, Davids Island,
New York.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL
SOCIETY.

Stated Meeting, March 16, 1897.

G. W. JARMAN, M.D., *Vice-President*, in the Chair.

A Monstrosity with Sacro-Coccygeal Cyst.

BY CHARLES JEWETT, M.D., BROOKLYN.

(See page 30.)

Dr. JEWETT also reported three cases, with the following histories:

Rupture of the Uterus, with Recovery after Hysterectomy.

The patient, an Irish woman, three-para, thirty years of age, was admitted to my service in the Long Island College Hospital about 10 P. M. on Friday last, March 12. She had fallen in labor, with twins, at term. The first child was delivered with the aid of a woman neighbor who volunteered to act as midwife. Unsuccessful attempts had been made to extract the second. The ambulance surgeon found the undelivered child presenting by the shoulder and the uterus ruptured. He extracted the child without difficulty. The injury consisted in a separation of the uterus from the vagina and bladder for a distance extending from the median line in front to the left lateral aspect of the cervix and a longitudinal rent in the corresponding portion of the lower uterine segment. No placenta had been found. On admission to the hospital, Dr. Frank Duffy, resident physician, placed a drain in the wound pending my arrival. The woman was anæmic from hæmorrhage, and there was reason to believe that the peritonæum contained blood clots and the missing placenta. The uterus was unusually large and dense. Owing to the unfavorable results, in my experience, of trusting to suture in rupture of the uterus I determined on hysterectomy. This was done about thirty hours after delivery. A single placenta with two cords was found among the intestines. The stump was dropped and the peritonæum closed over it. The peritonæum was flushed with hot salt solution and left filled with the same. A large quantity of the solution was injected into the rectum. The

maximum temperature since operation has been 100.6° F., and the woman is making a good recovery.

Puerperal Eclampsia.

The following case of puerperal eclampsia is of interest in connection with the present views of the ætiology. I am permitted to refer to it by the courtesy of Dr. John Cochran, the attending physician, and Dr. H. P. de Forest (consulting), with whom I saw the patient.

At my first visit, on the second inst., the history was briefly as follows: She had fallen in labor a few days before term, on the first, and was delivered with forceps on the morning of the following day. Her age was twenty-six years. The child was her first, one previous pregnancy having terminated in abortion. With the exception of violent emesis in the second and third months, her health during pregnancy had been good. At the labor she was apparently in perfect health. There had at no time been any œdema, and she was not overstout. Her urine had been examined weekly. It had been found in all respects normal till a week before labor, when it contained a trace of albumin. The quantity was undiminished.

The labor was not difficult and was terminated by low forceps, at the end of twelve hours, owing to arrest of the head. The child was living. Chloroform was given for fifteen minutes.

The amount of blood loss was less than usual. The first convulsion occurred two and one-half hours after delivery. At eleven P. M., when I was summoned, about thirteen hours after the first seizure, there had been seven eclamptic attacks. The temperature reached a maximum of 106°; pulse remained persistently at 160. Up to this time the treatment had consisted in the use of chloroform, chloral, diaphoresis, large enemas of salt solution veratrum (Norwood's tincture, by the mouth), inhalations of oxygen, and finally the withdrawal of six and one-half ounces of blood from the median cephalic vein. The bleeding had been stopped at this point owing to a mistake in the measurement. The temperature had fallen one degree after the venesection, but the coma persisted. During the first fourteen hours after labor twenty-two ounces of urine had been passed. It contained a large percentage of albumin, but the proportion of urinary solids had not been observed, as no suitable apparatus for the purpose was at hand. The bleeding was now

renewed till sixteen ounces in all were taken, and two quarts of seven-tenths per cent. salt solution injected into the vein in the hope of promoting the elimination of the poison. Eight ounces of milk were given by lavage. No further convulsions occurred. The subsequent treatment consisted in the continuance of the milk, the use of chloral per rectum, nitroglycerine hypodermically, and catharsis. On the morning of the 4th the temperature fell nearly to the normal and the pulse to 120 and the woman bade fair to recover. A few hours later the pulse and temperature rose again, and death ensued sixty-six hours after labor.

The interest of the case lies in the gravity and persistence of the toxic condition after labor, notwithstanding the seemingly free action of the kidneys. It goes to emphasize the necessity of systematic quantitative determinations of the urea and other urinary solids even in apparently healthy gravida.

A Case of Cæsarean Section.

K. S., age seventeen years, born in this country, primipara, was admitted to the Kings County Hospital May 28, 1896. The woman was a dwarf, 1.39 meter in height, and her pelvis was deformed.

The pelvic dimensions were as follows:

Intercristal.....	20.5	cm.
Interspinal.....	21.5	"
External Conjugate.....	15.5	"
Bis-ischial.....	10	"
Sacro-pubic.....	11.3	"
Diagonal Conjugate.....	11	"
Depth of Symphysis.....	4.5	"

The left half of the pelvis was smaller than the right. The head could not be made to engage in the brim. Labor began prematurely on June 24. After six hours of strong pains the head still remained above the inlet and could not be forced into it. The membranes were unbroken. Owing to the contraction of the left half of the pelvis and to limited mobility of the left sacro-iliac joint, symphyseotomy was thought inadvisable and Cæsarean section was decided upon. By the kindness of Dr. Maine, visiting obstetrician, I was requested to operate. The woman's recovery was uninterrupted, the temperature scarcely rising above 100° F., after the fifth day not exceeding 98.8°. The abdominal wound united *per primam*. The

child, which was artificially fed, died on the seventeenth day of inanition.

DISCUSSION.

Dr. SIMON MARX: I think the stand taken by most obstetricians is that, where we have an escape of the child or placenta into the peritonæal cavity, a radical operation is to be done. The case Dr. Jewett presents reminds me of one I saw a short time ago in which there was an enormous rupture. The woman went into labor with her second baby. The physician found a prolapsed arm. He attempted version from five in the morning until three in the afternoon without chloroform. He sent for the first consultant, who wisely decided to do nothing. I saw the case under deep chloroform, and did the simplest version I ever did. After pulling the baby out, I went into the uterus for the placenta and found my hand in a strange cavity. Then the first physician volunteered the statement that he had noticed the cavity about three hours after he had been with the case, but was not acquainted with the anatomy of the hole. I could pass my hand directly through the uterine cavity. The woman's pulse was absolutely normal, she suffered from no shock and there was no severe bleeding. I simply washed out the abdominal cavity with salt solution and packed the lower abdominal cavity with gauze. On the fifth day I took out the gauze and passed in a drain and told the physician to pass in a fresh drain every day and wash it out. He did that once too often. Suddenly the woman developed symptoms of peritonitis and died. There was a lot of adhesions two inches thick all over the roof of the pelvis. I think the case of eclampsia is a typical case of urinæmia; the history is characteristic: gradual toxæmia, and development of the eclampsia, not during labor but as soon as the uterus is empty. I am glad to see that the doctor has given up his *veratrum viride* which he exalted so highly a year ago. Personally I have had no effect from it. The case of Cæsarean section pleases me very much, because the doctor has done a number of symphyseotomies, and I am glad he selected Cæsarean section, as I believe the prognosis is much better in cases of Cæsarean section than in symphyseotomy, especially since I recently read in a medical journal the report of the result of 234 symphyseotomies performed in Germany, with a maternal death-rate of $10\frac{1}{2}$ per cent. and an infants' death-rate of nearly 20 per

cent. If we have an operation, which is especially done to save the life of the child and yet gives a death-rate of 20 per cent., I think the more strongly we adhere to Cæsarean section the better.

Dr. H. C. COE: How long after rupture was the operation done?

Dr. JEWETT: The woman was brought into the hospital about 10 o'clock P. M. and we operated at 2 P. M. the next day.

Dr. COE: I think that this was quite a fortunate result, considering the length of time which had elapsed. The prognosis of these cases varies inversely according to the time at which the operation is done. In the only successful case out of four in which I have operated the abdomen was opened less than two hours after the rupture occurred, and although the patient had lost a good deal of blood she was saved. But in the other cases, in which different periods elapsed, varying from twelve to fifteen hours, in spite of thorough cleansing of the abdominal cavity and removal of the uterus in one instance, there was a fatal termination.

Dr. JEWETT: I did not state that in the hysterectomy the peritonæum was closed without drainage. With regard to treatment by drainage primarily, I have seen a good many cases of rupture, a number of which I have sutured, a few of which I have drained, and they have nearly all died under either plan. With regard to the use of veratrum in the eclampsia case, I may say that the physician had used some 40 minims of Norwood's tincture before my arrival. Veratrum I still regard as one of the most useful drugs in puerperal eclampsia. Nor have I abandoned symphyseotomy. In the case reported I did not dare to trust the limited mobility of the left sacro-iliac joint. I still think I get good results from the veratrum.

Epithelioma of Cervix and Cystic Movable Kidney.

Dr. E. B. CRAGIN: Mrs. K., aged forty-nine (referred to me by Dr. Robertson, of Tarrytown), was admitted to the Roosevelt Hospital February 14, 1897, with the following history: Menstruation appeared at fourteen; was regular four-weekly till birth of last child seven years ago; it then became three-weekly in type, lasting five days at each period. She has had seven children and two miscarriages, the last miscarriage occurring ten years ago. Her present illness began last October, when she noticed a sero-sanguinolent dis-

charge from the vagina, and commenced to lose flesh and strength. This discharge has continued almost constantly since, and for the last three weeks has had a disagreeable odor. She noticed, about the time of the onset of her present illness, a movable lump in the right side of her abdomen. After an examination of this tumor by her physician in January of this year she noticed that for a day her urine was dark brown in color.

On examination of the abdomen a movable cystic tumor was found in the right iliac region. This tumor appeared to be attached above, and to have no connection with the pelvic organs.

A vaginal examination disclosed an epithelioma of the cervix with eroded surface, bleeding freely on manipulation. The uterus itself was movable, and no glandular enlargements were detected.

February 17 it was anæsthetized and the cervix curetted and cauterized. The abdomen was then opened, the broad ligaments tied in section, and the uterus freed from them and the vagina, and delivered through the latter canal.

The abdominal incision was prolonged slightly upward, colon drawn toward the median line, and the tumor, which proved to be a dilated kidney, removed through the abdomen. The peritoneum was closed over the site of the tumor, a small gauze drain being introduced from the lumbar region. The abdomen was then closed.

The uterus presented the usual appearance of epithelioma of the cervix.

The interest in the case centers in the kidney, which was about the size of a cocoa-nut and was cystic. No obstruction was found in the urinary tract, and the ureter at the point of separation from the kidney, and as far as could be felt seemed of normal size.

On compression of the kidney after removal, dark, clear fluid, without urinous odor, flowed from the cut end of the ureter where it entered the pelvis of the kidney. The kidney itself showed the pelvis and calices markedly distended; in fact, the kidney was merely a sac, with scarcely any cortex preserved.

The ætiology of the condition seemed to be the kinking of the ureter, due to the excessive mobility of the kidney, and the physician, during his examination in January, had probably in his manipulation overcome the obstruction sufficiently to allow the discharge of the dark-colored urine noticed by the patient.

The patient made a good recovery, only interrupted by an attack

of tachycardia, appearing on the fifth day and lasting twenty-four hours.

She was discharged cured March 12, 1897.

DISCUSSION.

Dr. G. W. JARMAN: Something like four months ago, I had occasion to remove a cystic kidney from a patient's left side. It was very large but, assisted by Dr. Dowd, I had no trouble in removing it, and the patient was making a normal recovery; passed on the second day after the operation ninety ounces of urine. About the eighth or the ninth day we could readily make out cysts in the other kidney. We had taken it to be perfectly normal at the time of operation. The patient ran a very high temperature. After about six weeks' convalescence, the patient insisted upon going home to die. She was in my office yesterday, and since she has returned to her home she has gained twenty pounds in flesh, and is apparently a perfectly well woman, except that when she walks very far she has a distinct sense of weight in her right side. The right kidney is badly degenerated, and yet she is passing forty-five ounces of urine a day, feels perfectly comfortable and has no trouble.

Sarcoma of the Ovary.

J. RIDDLE GOFFE, M.D.: Margaret McC., aged twenty-two, single, native of Ireland. Menstruation appeared at the age of seventeen, has been regular and normal in quantity until recently. The patient says that she has never been a very robust girl, and, although she has a good frame, she bears a suspicious flush on her cheek. This, however, may be due to the excitement. About three months ago she began to suffer constant pain in the right ovarian region, which was more severe during her menstrual period. Menstruation was normal until six months ago, when the flow became excessive and was followed by a leucorrhœa which lasted for about ten days after each period. To relieve her of this condition, she was curetted by her family physician, who, when the patient was under the anæsthetic, discovered some disease of the right appendages, and referred her to me.

Upon examination, I found the uterus about normal in size and position, but rather firmly held by a symmetrical, round, hard tumor, which filled the right fornix of the pelvis posterior to the broad ligament. Upon opening the abdomen, the following pic-

ture was presented: The uterus was normal in size, but was perhaps a little pushed to the left side. The appendages of the left side were healthy, but on the right side the broad ligament was seen to be pushed up and put upon the stretch by a hard, round tumor, which proved to be the right ovary. There were no adhesions whatever. The tumor had rotated in its antero-posterior plane, and in doing so had rolled the broad ligament well over its top and down upon its posterior aspect. This had wedged it into the pelvis quite firmly, and it required considerable force to rotate it in the reverse direction and roll it out of its fixed *habitat*. The Fallopian tube was stretched across its top, and the fimbriated end was carried well down upon the external aspect of the tumor. The pedicle was readily secured and the mass removed.

Upon pathological examination it was found to consist of round and spindle cells, and to be almost entirely devoid of stroma. Classified according to the opinion of the pathologist, it is a pure sarcoma of the ovary. The tumor is 6.3 centimeters ($2\frac{1}{2}$ inches) in diameter and is almost perfectly symmetrical, as may be seen by examining the specimen.

DISCUSSION.

Dr. H. J. BOLDT: A very interesting point presents itself in relation to this case. It is a question in my mind, and I believe also in the minds of a number of other operators, whether what is called fibrosarcoma is really a malignant disease. A very large number of cases which have been observed of fibrosarcoma have never had recurrence after removal, whereas, in a very large proportion of the cases of the large and small spindle- and round-celled sarcoma, recurrence of the disease has taken place. In one of my own cases, which I operated on two or three years ago, there was a recurrence inside of a year. I should like to hear the opinion of others upon this question.

Dr. G. C. FREEBORN: I think a physician would have to answer that question instead of myself. In my opinion the fibrosarcomas do not recur, as a rule, and in the specimens I have had for examination, there has not been any recurrence as far as I know.

Dr. COE: I corroborate what Dr. Boldt says. I have had some patients under observation, and they have never had any recurrence

Dr. JEWETT inquired as to the condition of the other ovary.

Dr. GOFFE replied that the other ovary was perfectly healthy so far as the general appearance went, normal in size and in good condition.

Dr. JEWETT: It is a common thing in fibrosarcoma to have the same thing in the other ovary.

Dr. FREEBORN: This specimen has not the appearance nor the touch of a true sarcoma. It is entirely too hard and dense. As to the question of the sarcoma appearing in both ovaries, I looked that up not long ago. It is common to have it in both sides, and it is just as common to have it in only one side. In my own records there are nine cases of sarcoma of the ovary, of which two were bilateral and seven unilateral.

Dr. JOSEPH BRETtauER: A few months ago, a member of this Society brought here a specimen of sarcoma of the ovary. At that time I asked if the other ovary had been diseased or not, and related a case of a young girl on whom I had operated two years previously for a fibrosarcoma. It just happened that three weeks previous to that meeting I had taken out the other ovary, on account of a neoplasm of the size of a fist. At that meeting, the majority present thought that it was not likely that the second ovary would be affected later on. My experience has been, in two cases, that both ovaries were affected. If it is very likely that both ovaries would be affected in these cases, I think it the correct procedure to remove both, even if one is apparently normal.

The Value of Microscopical Examinations of Specimens Removed by the Curette.

By HENRY C. COE, M.D.

(See page 1.)

DISCUSSION.

Dr. JEWETT: Most of us, I presume, have had the experience of submitting these specimens to two different pathologists and getting two opposite opinions. The explanation of the histologists is that they do not both get the same specimen. It is a common occurrence, too, to find the report of the pathologist inconsistent with the subsequent history of the patient. The pathologist on whose opinion I have been accustomed to rely takes the ground that it is impossible to give a satisfactory opinion on the histological findings unless he also knows the clinical history.

Dr. BOLDT: I personally feel in the same way that Dr. Coe does, that we cannot trust entirely to the result of the microscope in these cases, so far as the curettings are concerned. I believe that, in the great majority of cases of fungous endometritis, hyperplastic endometritis, if we have continuous recurrence, and the typical hæmorrhage returns a month or two or three months after curetting, and if after several curettings have been performed we have precisely the same results, we can rest assured that these patients will have malignant disease; at least, that has been the experience in some cases that I have had. I have had the same experience that Dr. Coe has had in having cases pronounced by the pathologist as absolutely benign, and cases refusing operation, who, within less than a year's time, would die of malignant disease. I remember one case distinctly where, upon operation—and it was an abdominal case—a piece of the resected omentum was pronounced malignant. I had an opportunity to make an autopsy on that patient three or four years subsequently, and no malignancy was discovered. I take the ground that in all of these cases of typical hæmorrhages past thirty-five years of age, where a few thorough curettings do no good whatever, or the hæmorrhages recur, that such patient is much better off without the uterus than with the uterus, and we should invariably perform hysterectomy where we have these hæmorrhages that resist all forms of treatment. In a great majority of those cases we find malignancy present; in others we do not find it, but there is hæmorrhage. For instance, take the specimen which I presented here a few weeks ago, on which Dr. Freeborn handed in a report this evening, that there was nothing there indicating any form of malignancy. I did the hysterectomy because the young woman had the constant hæmorrhages. Where that hæmorrhage comes from I do not know. I think we are not only justified, but that it is our duty in such cases as that, to do a radical operation. I do not care what the pathologist's report is in such cases and will be invariably guided by my clinical experience.

Dr. H. L. COLLYER: It is perfectly simple to my mind why these mistakes occur. After having seen a few cases of malignant uterus removed, where the cancer or malignant growth occupied only a portion of the uterus, it is very easy to understand that scrapings from that uterus regardless of the locality may not include the diseased mucous membrane, and that being submitted to the pathol-

ogist his report is negative. I know of one case where the malignancy was a very small spot in one of the cornua of the uterus, and which was only detected by the softness of the tissue on curettage; on scraping and submitting it to the pathologist that was found malignant, whereas the scrapings from the other side of the uterus showed a negative result. I had a case where I submitted two specimens to the pathologist; one was a little ulceration on the cervix uteri, and the other was a dense piece of adjacent tissue, which I thought did have malignant cells in it. On that dense tissue the report was negative, but the little ulcerations were reported as suspicious of malignancy. The case was operated on, and that portion of the cervix removed which was suspicious and the surfaces united. It is now two years, and no malignancy has developed. So if that ulceration was a malignant growth it must all have been removed.

Dr. GOFFE: I do not suppose the pathologist is called upon to give an opinion in any case in which he is compelled to base it upon so slight evidence as in examining the scrapings from the interior of the uterus, and I think, therefore, we must be charitable with him on that account. I am very much in sympathy with the remarks that have been made, looking to establishing the point that we cannot depend absolutely upon the opinion of the pathologist, but must be guided very largely by the clinical evidence. My experience has been, not only in my own individual cases but also in connection with Dr. Janvrin in his more extensive practice, in cases in which thorough and repeated examinations have been made by the pathologist, that the microscope is not the final test; indeed, I think it is a very great exception for any one to be surprised by the opinion of the pathologist that the case is malignant when it has not been previously considered so clinically and, as Dr. Coe has said in Hunter Robb's cases recently reported there were only two in which the pathologist reported malignant disease in cases in which he had not already suspected it, and in which the clinical evidence was not very strongly in favor of it. I recall one case in Dr. Janvrin's practice, of a woman over fifty years of age, who had repeated and alarming hæmorrhages that would occur three or four times a year. She was curetted over and over again. The scrapings were submitted to a pathologist on different occasions, and at no time did he give the opinion that there was any malignancy, although the whole

history of the case, the size and feeling of the uterus, indicated very strongly a malignant condition. Finally one of the pathologists was persuaded to give an opinion that the probabilities were that it was malignant, and the uterus was removed. Upon the section of the uterus afterward it was proved to be malignant. So that I would favor very much the positive opinion expressed by Dr. Boldt, that in all cases of women at or beyond the climacteric period in which there are recurrent hæmorrhages from time to time that resist our curettage, I should be very much disposed to place them in the category of malignant troubles and do a radical operation.

Dr. FREEBORN: I would not make a diagnosis of malignant disease when the specimen submitted to me for microscopic examination shows not the slightest evidence of it. I think the physician should bear in mind that very often when he submits a mass of curettings for a microscopical examination they are very little bits, and very often those little bits will come from the surface of the mucous membrane alone, and these little bits, as a rule, are accompanied by no history whatever. Then the pathologist is asked to make a microscopic examination and say whether it is malignant or not. That seems to be the great question. Dr. Coe made a point in regard to adenoma. There is a very common affection, which is called by various names, hyperplastic endometritis or adenomatous hyperplasia or adenoma. Of adenoma there are two classifications—malignant adenoma, and the adenoma running on the so-called glandular type. The malignant adenoma is of the papillary form. It is of rapid growth. That is a thing entirely distinct from the ordinary adenoma, or the adenomatous hyperplasia. I have had three cases of malignant adenoma where the diagnosis was made from the curettings, and on examination of the uterus after removal I found a profuse growth of the malignant adenoma, involving nearly the whole wall of the uterus; in one case it was confined to the fundus and horns of the uterus, and in taking out the uterus something had broken a little hole in the fundus of the uterus, and some of this growth had come up through the opening, showing that it was just shut in by a very thin layer of muscular tissue. As to the difficulty of making a satisfactory diagnosis: I have had two cases where I examined the curettings, in one case three distinct times, and in the other four times. I could not make out anything malignant in them. The clinical symptoms were such that the surgeon

decided to take out the uterus, and in both of those cases, deep in the wall of the uterus, underneath the mucous membrane, and in one case, evidently starting from the cervix, we found carcinoma. In both those cases the curette slipped over the malignant growth. How can you expect your pathologist in such a case as that to make a diagnosis of cancer, when you do not furnish him with any of the cancerous material? In regard to this hyperplastic endometritis, in the cases I have had where I could trace them up, I feel perfectly satisfied that they were, especially in old women, the forerunners of carcinoma, and on one occasion in this Society I asked the question, and requested that the gentlemen would state their experiences in regard to the final results of these cases. Two of the members answered that their experience was the same as my own. I think now we are in a position to throw a little more light on the result of our microscopical examination of curetting from the study of cell proliferation. Now, as to the pathologist making a positive diagnosis as the result of these examinations, in the first place, as a rule, he is furnished with very little of the clinical history of the case; he has a bit of tissue for examination, and my rule is never to give an expression of opinion as to malignancy unless I can find a true carcinoma or a true sarcoma without any doubt. I am willing at times to express the opinion that the thing is decidedly suspicious. So I think that in the future you must look at the pathologist in another light, look upon him rather as an aid in helping you to form your diagnosis.

Dr. COE: We may sum up the whole discussion by saying that in all these cases we must depend in the first place upon a careful review of the clinical history of the case and then upon the report of the pathologist, whether it be in the positive form or in the negative; and that in every doubtful case we are to keep the patient under observation, and if, after repeated curetting we find the symptoms still remain, or the trouble becomes aggravated, then a radical operation is indicated. This is in the case of women before the menopause. In the case of women who have passed the climacteric we should not allow too much time to elapse, even with a negative microscopical diagnosis, but should proceed to do a radical operation even after a single ineffectual curettement.

Official Transactions.

A. M. JACOBUS, *Recording Secretary.*

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, May 21, 1897.

The President, ADDISON H. FOSTER, M.D., in the Chair.

A New Button for Intestinal Anastomosis.

Dr. JOHN A. LYONS: This instrument I have been laboring over for about one year.

It is a metallic button with two discs, and resembles in principle the Murphy button. The approximating edge of each disc is indented in five different places to the depth of 2.5 millimeters (about $\frac{3}{32}$ of an inch), and has no sharp edges or corners that might penetrate the bowel. The serrations are so arranged that the broad elevations of one disc fit neatly into the broad depressions of the other. When the button is ready for use its two halves are permanently fixed together by a spiral spring, which is placed between the male and female central cylinders. The cylinders are, of course, inseparable from the discs.

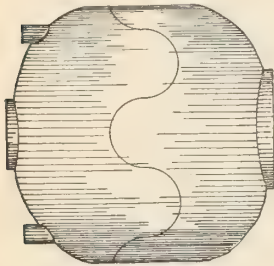


FIG. 1

Perspective view of the
Button complete.

From the inner border of the female cylinder three prolongations extend through the male cup which protect the spring and prevent the possibility of tying the puckering string around the spring. The fenestræ through which these prolongations pass will act somewhat as drains of the cup of the button.

Through the cylinders there are a few holes through which may be passed a movable long steel pin or probe, for the double purpose of keeping the discs apart, and of holding the button firmly while the operator ties the bowel in place.

When the pin is withdrawn the button approximates the intestinal walls automatically, and completes its application without undue manipulation or injurious pressure to them.

Another factor I believe to be somewhat important is that the circumferential distance over the serrated edges is much longer

(averaging about one-third) than is the distance over a level edge, so that a larger lumen is obtained at the place of anastomosis with a button with a serrated edge than with a button with a level edge; consequently a smaller button of this pattern may be used.

The claims made for this device may be readily inferred from the above brief description, and are:

1. It is compact, in one piece, and ready for immediate use.

2. The method of its manipulation during application is such as to give a minimum amount of bowel disturbance and injury.

3. The automatic action from the properly-arranged spiral spring removes the necessity of forcibly pressing home the discs, so that all injury from this source is eliminated.

4. The size of the button need never be large, because of the long line of union which results.

5. Imperfect co-aptation of its discs is impossible.

6. It is very easy to apply.

7. There is less liability to bowel obstruction during its passage through the bowel, as the button is always small.

8. The spring pressure is the same at all points, and it is more reliable than rubber.

9. It is durable.

10. After being used, when boiled and made clean, it is ready for use again, no portion of it being displaced.

11. For this reason it is in the end a very cheap button, as it only requires occasional replating.

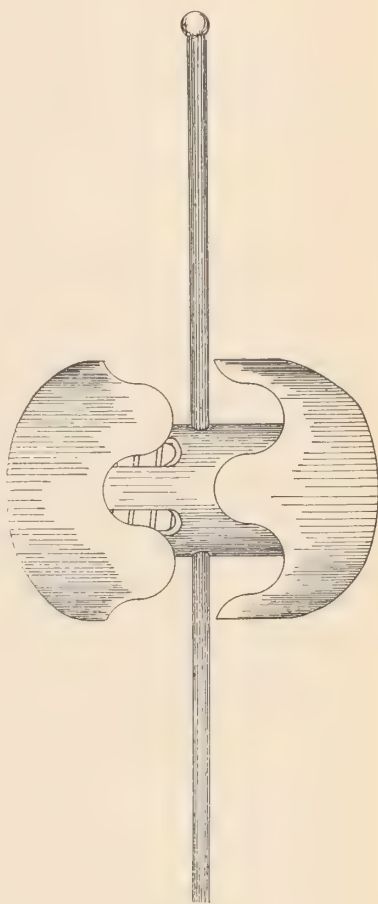


FIG. 2

The Button open with Rod or Probe holding it open until the Intestines are attached to the center cylinder. When the Rod is removed, the Discs approximate the Bowel by its Coil Spring.

The one I show you now has been used in an end-to-end anastomosis, and was passed yesterday after having been in the abdomen four days.

The small dog on which it was used is running around and eating well.

More experiments are being made to determine absolutely and accurately some of the points claimed for the button.

The main object, this evening, is to place my invention on record, but at some future time I shall present a report of my experiments.

DISCUSSION.

Dr. ALEXANDER H. FERGUSON: In bringing forward this new device, Dr. Lyons claims that it is an improvement upon the Murphy button. It certainly does away with one objection which I have found with Murphy's button, and that is in trying to put the two parts of the button together after the puckering stitches were applied, one of the sides caught first and I could not pull it off nor push it together. Dr. Murphy claims that if his button is perfectly made such a thing cannot take place. But the fact that it does occasionally occur is sufficient. The device presented by Dr. Lyons obviates this difficulty; but I do not think there is anything in the claim he makes with reference to getting a better circulation than we would have by the application of Murphy's button. The fact still remains that this and other buttons that have been devised produce gangrene, and there is no use of circumlocuting and using the name of pressure atrophy. A slough takes place, and if this occurs before healing has taken place behind the cutting off of the circulation, then, of course, there is more liability of leakage, so that this spiral spring pressure, regulated as in the Murphy button, would be about even as far as merit is concerned. But the great objection is gangrene, and whether an extension of the gangrene or liquefaction of the plastic material that is thrown out to form union takes place or not will depend a great deal upon the intestinal germs that may be present. There are a number of objections to the suture. If we could get a combination of some device which would do away with the objections of gangrene or the formation of large sloughs it would be a good thing. Of course, the surgeon who is accustomed to sew can sew accurately. I have been working along these lines myself. I

have been sizing up the objections to both the suture and button, and thus far, in my opinion, we have no device that is absolutely faultless or perfect. The device of Dr. Lyons should be thoroughly tested experimentally. I have no doubt there is merit in it and that it will prove of value to surgeons.

Dr. LYONS (closing): I am aware, Mr. President, that "one swallow does not make a summer," nor does one successful application of any device settle its fate: I am, however, grateful for the reception given to it to-night, and it encourages me to still further pursue my work on these lines. That the Murphy button and other devices hitherto produced have serious faults has become apparent to many of our best surgeons. Some of these objections have been pointed out in this Society before now, and this evening by Dr. Ferguson. Yet, I look upon the Murphy button as superior to any other device heretofore invented, and it was with the hope of overcoming, at least, some of its objections that I began this work.

Most of my experiments have been conducted at The Post-Graduate Medical School, assisted by Messrs. Wilson and Emerson.

I am given to understand by the manufacturers that the price of the button will be quite reasonable. They are making for me the same style of button without the indented approximating edges, but I do not think these will prove as satisfactory or as efficient as the indented ones.

Uterine Fibromata in Pregnancy, with Report of a Case.

BY WM. H. RUMPF, M.D., CHICAGO.

(See page 17.)

DISCUSSION.

Dr. C. S. BACON: If the case that has been presented is anything more than an excuse for a consideration of fibroids during labor, I think the consideration of its bearing upon the production of eclampsia should have been more thoroughly discussed. The cause of eclampsia is still involved in so much doubt that anything which will tend to help clear up the subject ought to be made use of. I believe that the trend of opinion at present is that eclampsia is due to an increase in the toxicity of the blood serum, and that the nature of the toxic element may perhaps be something different from

the ordinary toxic element of the blood, or it may be simply the toxic elements in normal blood which are not eliminated by the excretory organs. In any case there is a failure in elimination, either of a foreign toxic element or of the ordinary toxic element. The kidneys and the other excretory organs do not excrete as much as they should. Whether the fibroid tumors, as I believe has been held by some, injure the function or the structure of the kidneys, and how, would be a very interesting subject for a little more discussion than the essayist gives. Is it by the action of the toxins produced by infection of the fibroids, or is it due to the compression of the ureters produced by the tumors?

In the discussion of fibroid tumors and the complications that arise from them, such a broad field has been gone over that I do not know that there are any particular points upon which I care to dilate.

The PRESIDENT: I would like to ask Dr. Bacon whether he has ever encountered very large fibroids during pregnancy?

Dr. BACON: I have had cases of fibroid tumors of considerable size complicating pregnancy, which caused no interference with labor. I have never had any cases which gave rise to any interesting complications in fibroid tumors of the uterus. But I have had cases of considerable size that gave absolutely no disturbance.

Dr. T. J. WATKINS: One point of interest in Dr. Rumpf's paper relative to eclampsia is the large amount of urine secreted immediately after labor. I remember having a case where two weeks prior to labor the woman secreted daily under the influence of diuretics from two to four quarts of urine; the amount of solids excreted was more than normal. She had severe eclampsia during labor, notwithstanding the profuse elimination by the kidneys.

In considering the relation of fibroids to sterility, it might possibly be of some interest to consider the ætiology of these tumors, as the condition that produces the fibroid may be one that will produce sterility. For instance, I believe Dr. Byford has ventured the opinion that fibroids are due to a germ; and Joseph Price also states that in cases of suppurative disease of the appendages fibroids often result. The indications for interference with pregnancy complicated by fibroids have not been well given, and, as the essayist has said, there is undoubtedly too great a tendency to operate during pregnancy. It has been frequently stated that a fibroid should not

be treated surgically during pregnancy, if it is not large and is not located so low down as to mechanically interfere with labor. There are probably many cases where in the early months of pregnancy the tumor is located in the bony canal, and as gestation advances the tumor is elevated out of the bony canal and permits natural labor to take place. I remember particularly one case that I operated upon where a large fibroid of the uterus was located low down in the pelvis, which I felt certain would interfere with labor. But in this case after operation the tumor proved to be located on the posterior wall of the uterus quite near the fundus; the uterus was retroverted by it, pregnancy having taken place anterior to and above it. It is not at all improbable that in this case, with development of the uterus, the tumor would have risen out of the pelvis, and this could probably have been materially assisted by manipulation under an anæsthetic.

Another important point is the influence that fibroid tumors have upon the puerperium. About two years ago Dr. Mann, of Buffalo, read a very exhaustive paper upon this subject, in which he showed that where infection takes place in a fibroid uterus death had almost invariably resulted. About a year ago I operated on a case of uterine fibroid during the puerperium. The operation was done about twelve days after labor. In this case a degeneration had taken place, such as the doctor mentioned. The fibroid was located in the posterior wall of the uterus, and its center had undergone such changes as to result in an abscess which contained about one pint of offensive pus. Strange to say, the appendages and the peritonæum showed no signs of infection; all of the infection was apparently located in the fibroid tumor.

Dr. EMIL RIES: It has given me great pleasure to hear Dr. Rumpf express such conservative views on this subject, as the general trend of opinion in regard to the treatment of fibroids during pregnancy is slightly too much to the other side. Still I must say, that after one has seen the awful consequences of the development of a fibroid in the puerperal uterus, eventually terminating in death of the patient, as I have seen in one case, he is very much inclined to favor operative procedures. The decision of the question whether to operate or not will, of course, largely depend upon the seat of the tumor. When the tumors are subserous, pedunculated, or when they are very low down in the cervix and are not very large, it

will not be necessary to operate. But where the tumors are intramural, or where large tumors are situated in the cervix, the question of operation during pregnancy or confinement is to be seriously considered. It is not a long time since operations during pregnancy for fibroid tumors were undertaken, and at first the results were unfavorable, because almost invariably abortion followed the operation. Recently, however, the results have been so favorable, especially as regards the life of the fœtus, that we have been encouraged to operate. Patients have been operated upon where the tumor or tumors extended through the wall of the uterus down to the decidual membrane, the decidual membrane having been laid bare during the operation, and yet pregnancy and labor were successfully terminated.

In the case of the patient mentioned above, death occurred after confinement, in consequence of hæmorrhage. In this case a number of fibroid tumors had developed in the wall of the uterus and, in consequence of these fibroids which had undergone liquefaction, there was imperfect contraction of the uterus. The patient died in spite of all conservative methods of treatment employed, such as massage, hot injections, and packing with iodoform gauze, etc. I wish we had operated in that case. In the next case of a similar kind that comes under my care I shall certainly operate.

In myomatous tumors of the uterus during confinement, a good deal depends upon the efficient or inefficient contraction of the uterus. Insufficient contraction of the uterus prevents delivery of the afterbirth, and consequently an operation for the removal of the afterbirth is resorted to too frequently with insufficient aseptic precautions. I have seen such cases and have operated on one where, after normal spontaneous delivery of the fœtus, the placenta did not come away, and the doctor in the country had finally to remove the placenta. The consequence was high temperature and chills very soon after confinement, with the formation of an enormous abscess in the myoma. The uterus was extirpated without difficulty. The patient recovered, but she was in a dangerous condition of sepsis when operated upon.

A few words as regards eclampsia in its relation to myomas. Some ten years ago, when I wrote my inaugural thesis on eclampsia, I looked up the literature, trying to find cases of tumors of the uterus of any kind that had led to eclamptic convulsions or even to

uræmia. I found no case on record where a uterine fibroid or a tumor impacted in the pelvis had led to uræmia. All of the tumors which do lead to uræmia are of such nature that they spread to the connective tissue and infiltrate it, bringing about compression of the ureters. These tumors are either carcinomas or sarcomas. In cases of intraligamentary myomata or parovarian tumors, compression of the ureter appears more likely to occur than in ovarian tumors. But in none of these cases have eclamptic convulsions been observed. Uræmia frequently follows carcinoma, from compression of the ureters by the growth. In cases of myoma I have not observed eclampsia. In this special case which I saw with Dr. Rumpf, the myomata did not fill the pelvis; they were subserous, and had a degree of mobility which I think excluded the possibility of the eclamptic convulsions being caused by pressure of the tumors on the ureters.

I have examined a number of cases where large tumors formed in the pelvis, and have tried to find abnormal constituents of the urine which might be produced by compression of the ureters. The theory of the production of eclampsia by compression of the ureters is that, in consequence of the stagnation of the urine, the epithelium in the kidneys is injured and allows a certain amount of blood albumen to pass away; in this way albuminuria ensues. If this is correct, compression of the ureters must lead to albuminuria often, if sometimes to eclampsia. But I have not been able to find albuminuria in cases of tumors filling the pelvis. Albuminuria does occur sometimes in malignant tumors in the pelvis, but then we always have the question of possible metastasis in the kidneys, and consequent albuminuria.

The disappearance of fibroids during the puerperium is a fortunate occurrence; nevertheless I should wish to see the patient operated on, if necessary, during pregnancy if the tumors begin to grow. During pregnancy tumors which at first are subserous may become intramural, and may lead to serious consequences during confinement, and may be more difficult to manage if they have grown into the wall of the uterus. If in the case presented here a second pregnancy occurs, and on close observation the tumors appear to grow, I should advise operation during pregnancy for removal of the tumors without extirpation of the uterus.

Dr. JOHN A. LYONS: This excellent paper of Dr. Rumpf calls

to mind a case I had some three years ago. I confined a woman, and a short time after delivery of the child there was a severe hæmorrhage from the uterus, which led me to think that I had left some membranes in the uterus. I entered the uterine cavity and dislodged a submucous fibroid which was near the right horn of the uterus. It was about the size of an ordinary orange. I cleaned out the depression that was left, and the patient made a good recovery. Some six weeks ago another physician delivered the same woman, and she has since had a very serious time. On being called to see her I found her limbs very much swollen, and she is confined to bed. I am inclined to believe that she has another fibroid tumor and that infection has taken place, as occurred in the case reported by Dr. Watkins.

I recall another patient who had a uterine fibroid. The patient became pregnant and, at about three and a half months' gestation, aborted. The wall of the uterus, particularly the anterior wall, in this case was very thin, and a fibroid as large as my hand was situated in the posterior uterine wall. I think the fibroid has reduced in size since then.

Dr. RUMPF (closing): I agree with Dr. Bacon that it would have been interesting to have dwelt upon the question of the possible cause for the eclampsia a little more fully. I did not do this for two reasons: In the first place, I did not wish to branch out too extensively from the subject of my paper and, in the second place, I believe with Dr. Ries that the tumors had nothing to do with the production of the eclampsia. In looking over the literature of this subject, I was able to find only one case similar to the one reported by me. This case I found in Lusk's *Text-book of Obstetrics*. I do not agree with Dr. Ries in advising so strongly the removal of these tumors during pregnancy. The complications which arise from fibroids during pregnancy and their interference with delivery are very slight as compared with the great danger of operation during pregnancy. The hæmorrhage and danger of infection, besides the possibility of abortion, I think outweigh the advantages to be gained by removing these tumors during pregnancy. They can be much more safely enucleated after confinement, even if they do become slightly interstitial after having been subserous.

Official Transactions.

T. J. WATKINS, *Editor of Society*.

TRANSACTIONS OF THE WOMAN'S HOSPITAL
SOCIETY.

Stated Meeting, May 11, 1897.

The *President*, A B. TOWNSHEND, M.D., in the Chair.

Case of Retained Menstrual Blood in the Broad Ligament.

Dr. L. GRANT BALDWIN: Miss L., age twenty-four, native of the United States, never pregnant, was sent to my service at St. Peter's Hospital October 4, 1896, and gave the following history:

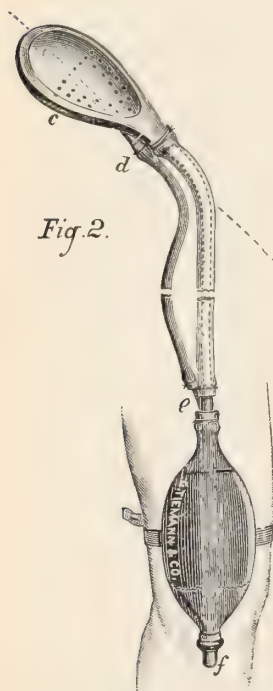
She had suffered from severe dysmenorrhœa all her life, but always had a very scant flow, only just a show; for eight months she had been obliged to give up her position, that of governess, and for three weeks had been in bed with the most agonizing pain, in the lower abdomen and right side, of an interrupted character. For the two months just previous she had not menstruated at all, and there had been no bloody discharge accompanying the paroxysm of pain. Examination revealed a mass filling the abdomen to the umbilicus, which was very tender on manipulation and fluctuated; the uterus was in front, and to the left; temperature, 102°; pulse, 128; and the morale was bad. I was unable to make a diagnosis. Four days later I opened the abdomen and found the tumor to be in the right broad ligament. Fifty ounces of almost black, thick yet fluid blood was withdrawn by aspiration. On the inside of the remaining cavity was a fibrinous deposit which could be peeled off, but there were no clots whatever. Further examination now showed a very small uterus, not more than two inches long, and it was with considerable difficulty that the finest probe could be made to enter the cavity, the fundus being held by the left hand in the abdomen while the probe was manipulated with the right in the vagina. Now, for the first time, it was suggested that it was a case of retained menstrual fluid. The Fallopian tube was found normal for about three-quarters of an inch from the uterus, when it became lost in the walls of the distended broad ligament, there being no trace of the frimbriated extremity. The ligament was stitched to the abdominal wall

and gauze drainage instituted. Convalescence was uneventful. Three weeks later I dilated the uterine canal and sewed in a solid glass stem, which was worn for three months. In November and December menstruation occurred through the abdominal wound, but before the next epoch the wound had closed and the flow came by the natural channels, but was very scant in amount, although much more than ever before in her life. I have had no report of her since that time.

The following is the report of the pathologist, Dr. Seymour:

"In a comparatively short time I have had three cases of amenorrhœa, due to occlusion at the internal os. In the first two there was no formation of menstrual fluid whatever, but in both cases menstruation has occurred regularly since the establishment of the uterine canal. The details of the first case were published in *The Medical News* for November 14, 1896; the second case was reported before this Society some months ago."

This last case, I take it, illustrates the rule in this class of cases; *i. e.*, in cases of occlusion of the uterine canal there will ordinarily be an accumulation of bloody fluid above the constriction and not a suspension of the function.



Instrument for Collecting Urine.

Instrument for Collecting Urine.

Dr. N. G. BOZEMAN: This is an instrument that is worn in the vagina when there is an artificial fistula; it collects the urine. When the patient is standing, the instrument being introduced, the bag is worn tight about the knee and the urine collects in the instrument and flows down into the bag. When she is in a reclining posture the bag is thrown on the bed and the urine collects in it, as it is siphoned out by the tube which is in the back part of the instrument. The patient wears it both night and day, and in that way she

can keep herself perfectly dry. The instrument may be of different sizes; this one is two inches wide, three and a half inches long and one-half inch thick. They can be made a little smaller than that, but this is the average size. Where there is a laceration of the perinæum, the instrument acts as well as if there were no laceration. When the urine collects in the bag and the bag gets uncomfortably full, the top is loosened and the urine is allowed to escape. I demonstrated an apparatus at the last meeting, an irrigator to be used after establishing an artificial fistula, and this douche apparatus I have here is practically the same thing, except that the outflow is not regulated to a minimum quantity. With this apparatus the water will flow out of the bag, which holds two quarts, in twenty minutes. Of course, the quantity of water used is very much greater than in the irrigator that I showed at the last meeting. The perforated tube is introduced into the vagina, and the water running through it flushes the vagina and extends into the bladder through the fistulous opening. The apparatus is practically an intermittent siphon, the inflow is regulated, is constant, and is less than the outflow.

DISCUSSION.

Dr. J. RIDDLE GOFFE: I do not know, Mr. President, that I have anything special to say about it. It seems to me a most ingenious device if it works as the doctor says it does, and I have no doubt it does. There is certainly nothing that is more disagreeable, more uncomfortable for a woman than to have the urine constantly dribbling away, and we know there are such cases, and if by applying such a simple apparatus as this she can be relieved, it is certainly a very great blessing. The only objection that I have found in the use of rubber instruments, in this connection, is that they so quickly become soiled and consequently have a very bad odor. I have had some slight experience with rubber bags worn by women in that way, and I have found that it was necessary to get a new bag quite frequently; it, therefore, becomes somewhat expensive. However, if the woman will scald the bag twice a day with very hot water, it will keep sweet for a long time. One woman I know wore a bag for a year and a half, but she was extremely neat in her person, and was very careful to scald the bag and the tubes frequently. It was not this apparatus, it was simply a vulva arrangement, catching the

water and carrying it down. With that, a woman could remain dry only in the upright posture. This, I understand, works perfectly when the woman is in bed lying upon her back.

Dr. W. GILL WYLIE: I think it would be most useful in certain cases, and the ingenuity of it and the mechanical action does a great deal of credit to the doctor. It seems to me he ought to utilize his ability in other things, and rather more important things. I should think that this constant irrigation apparatus, with some slight modification, could be easily adopted to wash out cavities like the uterus. I am satisfied that where intermittent washing is done in septic cavities, that is, two or three times a day, you might as well wash a person's head so far as controlling poison; whereas, constant irrigation kills the germs as fast as they form. This apparatus might be very useful. I had a case recently that I saw when at Old Point Comfort, where I went to see a case of peritonitis. The doctor told me of another case that he wanted to come to New York to see a specialist, that my name had been mentioned, but that they could not afford it, and the country doctor operated on her and, after the second or third operation, he did not succeed. She had a fever that they thought was malarial fever, and she was sent down to Old Point Comfort to get rid of it. I told him that I would go over and see the patient for nothing, as the other patient was rich and could pay for any trouble that I took. I saw it was an enormous septic abscess, and fixed the drainage and left a nurse in charge, and the nurse kept up an irrigation for a week or ten days. She came to New York, and was in pretty good shape when she went home, but came to me for the same septic condition and asked if I would do a regular operation, but the abdomen had been opened and I simply dilated the old opening, put my fingers in and scraped out a lot of gelatinous material, put in drainage, and had the thing washed out every hour or so, and controlled the sepsis completely. I think it would be well, if the doctor had a case of that kind, to try constant irrigation of the uterus to see what could be done. You would want to soak the uterus; try to keep a certain amount of irrigation in the uterus. I think the doctor ought to use his talent in any mechanical contrivance that is useful in gynecology.

Dr. L. G. BALDWIN: From actual experience I know the instrument works perfectly, as the doctor has described it.

Dr. GEORGE H. MALLETT: I have had some experience with the

continuous irrigation in the treatment of intestinal fistula. Two cases I treated successfully in the hospital by this method.

One case of intestinal fistula following an operation for appendicitis recently, has closed with no treatment other than frequent irrigation.

I should have been glad to have used the method of Dr. Bozeman, had I had the apparatus.

Dr. A. B. TOWNSHEND: At the time that I was in the Woman's Hospital Dr. Bozeman, Sr., began to experiment with the instrument presented to-night, and a considerable number of them worked perfectly. Is not this a little change from the one he made?

Dr. BOZEMAN: It is; there is little change in it except the long tube extending to the bottom for the purpose of siphoning.

Dr. LEROY BROWN: The glass tubes, are not they put in to break the fall, to increase the suction?

Dr. BOZEMAN: They are put in to divide the column of water. It takes less water the more you have.

Dr. BROWN: I thought this acted more on the principle of a Sprengle pump.

Dr. BOZEMAN: You would not be very certain of it if you only had one coil, but if you have two or three coils you are certain to get the column broken. The air coming through the tube has nothing to do with the suction. The intermittent siphon takes the water down into the vagina. I have used this kind of irrigation for three or four cases of appendicial abscesses with perfect result; the abscess in each case healed up in three weeks. I used it in one case where I could not remove a cyst, which I had to drain. I made a counter-opening in the vagina, put the double current tube into the cavity, and directed the nurse to attach the irrigator to it several times during the day.

An Embryo, with its Membranes, a True Mole and a Decidual Cast, Removed at the Same Time from a Patient.

Dr. J. DOUGAL BISSELL: The first specimen is an embryo, about seven or eight weeks developed, with its membranes complete. The second is a ruptured sac, and may be classified as a true mole or product of conception, where the embryo has been blighted, and the development of the membrane has progressed.

The inner surface of the sac is smooth and glossy, simulating in character the inner surface of an ordinary amniotic sac. The outer surface is rough, showing everywhere points of intimate adherence with surrounding structure, from which it draws its blood supply. The thickness of the sac is about one-twentieth of an inch. The third specimen is a decidual cast, a mass of thick tissue, rough on both inner and outer surfaces, and when removed presented a complete cast of the body of the uterus.

These specimens were secured from the same patient, at the same time, and in the order mentioned. The following is a brief history of the case:

Mrs. N., multipara, age twenty-four; last menstruation, July 1 to 5, 1896; conceived during the week following menstruation, and suffered very much from nausea and vomiting for several weeks succeeding. During the entire month of August her mental condition was distressing, and she made several efforts to destroy herself. On September 9 she began to flow, and from that time on she improved mentally and physically until September 16, 1896, when she aborted.

When called to attend her I found the vagina filled with blood clots, the uterus well dilated, at which was presented the embryonic sac. The sac was secured intact; following, incidentally, was the true mole, which had been previously ruptured by uterine contraction; on further examination, the uterus was found to contain an irregular mass intimately connected with its walls. This was without difficulty dissected away by the finger.

The hæmorrhage which preceded the abortion, probably, occurred between the mole and the decidual cast, and Nature, in her effort to throw off the false conception, was also obliged to expel the true conception. The question as to the difference in the age of these sacs may arise. It is possible that one may have started before the other, but it is probable that impregnation of each ovum occurred at the same time. The embryo is just about the size we would expect to find it, according to the history of the pregnancy. The mole sac is much larger and thicker than that of the embryo, but this is probably due to abnormal activity in the membranes, which is usually joined under such circumstances, and not in the difference of age. The uterus was thoroughly explored with finger after the specimens were removed, and it can be said with positive-

ness there was but one uterine cavity, and no dilatation of either tube.

DISCUSSION.

Dr. E. L'H. MCGINNIS: I have seen nothing quite the same. I had a case of interest last May, however. There was a lacerated perinæum, in addition to the ectopic gestation, and while patient was in bed with the operation for its repair, the flow came on, and a putrid mass was passed from the fresh wounds. The patient had no trouble, the flow lasted seven or eight hours and the patient got well. Unfortunately, the mass was thrown away before I saw it. It is the only case that occurs to me now that is at all similar. There is no question about the diagnosis in that case, because it was seen by three or four who verified the diagnosis and thought well of the treatment.

Dr. A. P. DUDLEY: There is one point: the doctor reports a true pregnancy, an embryo, a true mole and cast of the uterus in the same cavity. I can hardly see how they could remain there without abortion. The question is: was it one uterus, two uteri, or what was it he had to deal with? Certainly, if the uterus was occupied by a true conception it would hardly seem possible to have a true mole within the same cavity. If it is a true mole within the same cavity of the uterus, it would hardly be possible to have also a conception and a perfect cast of the uterus at the same time. I would like to have the doctor explain it.

Dr. BISSELL: I have no theory to advance regarding the way in which Nature took care of these specimens. My purpose in exhibiting them was to procure from some member an explanation of the condition in utero. I delivered the patient of a full-term child one year previous to this abortion. When the decidual cast was detached from the uterus the entire cavity was explored. There was found but a single cavity, with no enlargement of the tubes.

Methods of Instruction in Gynæcology.

Dr. J. RIDDLE GOFFE: I thought it might be of interest and certainly of great profit to me if the members of the Society would discuss with me my system of teaching diagnosis in gynæcology. Directly after leaving the Woman's Hospital I received an appoint-

ment to a dispensary class, and almost immediately began taking students for instruction in gynæcology. I found the greatest difficulty in instructing them how to make a diagnosis. Sometimes students would be with me for two and sometimes three months before they were able positively and satisfactorily to me or to themselves to make a diagnosis, and case after case would come before them where they were not able to locate the uterus, and tell me what the position was. Out of all these difficulties I finally, after nearly twelve years of this kind of work, evolved a definite plan of presenting the subject to students. Since I have adopted it, students learn to diagnosticate pelvic conditions very promptly, and in my hands it has proven extremely satisfactory. Yet at the Polyclinic, where we have a great number of teachers, I instruct the students in this system of diagnosis, and they are able to carry it out perfectly in my clinic, and I understand, from the discussion among the students themselves, that they are able to apply it satisfactorily in the classes of other teachers there; yet, when they try to explain the system, it is always criticized and my colleagues of the faculty say it is all nonsense, it won't hold. Therefore, I have ventured to present it here to-night, asking you to give me your candid opinion about it, as to whether you think it is well founded, and any opinion that you might have in regard to it, and I shall not feel at all annoyed if you tell me it is incorrect.

My plan is to present the subject in the progressive sequence in which a man in making a diagnosis gets his information. In passing the finger into the vagina the first part of the uterus with which it comes in contact is the cervix and, therefore, I have classified the positions of the uterus in my plan of instruction in accordance with the positions of the cervix; first, the cervix in normal position, or perpendicular to the axis of the vagina; second, cervix in [parallel to] the axis of the vagina, or pathological position. This practically covers all the positions of the cervix. The next point is to recognize these conditions. I use three tests: the finger as it passes into the vagina, if the cervix is in the normal position, approaches it perpendicularly to the anterior lip, the os uteri is reached by passing the finger under the anterior lip, and to reach the posterior fornix it is necessary to bend the finger. When the cervix lies in the axis of the vagina the finger approaches the anterior lip parallel to it; secondly, the finger, instead of going under the an-

terior lip to feel the os, comes end-on into it; and thirdly, instead of bending the finger to reach the posterior fornix, it palpates it as easily as it does the anterior fornix, keeping the finger perfectly straight. If the cervix is perpendicular to the axis of the vagina, *i. e.*, in normal position, 999 cases out of 1,000 the fundus will be in a normal position. If the cervix is in the axis of the vagina, there is always a pathological condition, and the fundus will be found in one of three positions, *viz.*: anteflexed, retroverted or retroflexed. That covers the whole subject of positions of the uterus. I endeavor to make every student follow this system literally, and insist that as he progresses with an examination of a case he explains how his finger approaches the cervix, whether it be perpendicular or parallel, etc., induce him, by direct questioning, to say what inference he draws from the position of the cervix as to the probable position of the fundus. With these points clearly defined, the bimanual palpation is resorted to and the fundus located.

The question as to what is normal position immediately arises. My teaching in regard to this is that the uterus is naturally in a state of unstable equilibrium, and normal position of the fundus is anywhere between the symphysis pubis and the promontory of the sacrum, and this is dependent almost entirely upon the degree of fullness of the bladder. If the cervix is in normal position, and if the hand is placed on the abdominal wall, just above the symphysis, in lifting the uterus by the finger in the vagina the fundus can be made to strike against the anterior wall, the fundus is in normal position. If it is below the promontory of the sacrum, it is retroverted or retroflexed. In regard to recognizing these various positions, if the cervix lies in the axis of the vagina one of three positions must be found. If the finger be kept in contact with the posterior surface of the cervix and pushed straight back into Douglas' pouch, and the finger remains in contact with uterine tissue as far as the finger can reach, the probabilities are that there is a retrodisplacement. On the contrary, if uterine tissue does not extend to an extent equivalent to the normal length of the uterus, the probabilities are that the uterus is in a state of anteflexion. Now the stage of proceedings has arrived when bimanual manipulation must be resorted to. In this procedure one hand must be held perfectly quiet, and used simply to steady the parts. The fundus uteri is the guide-post to everything else in the pelvis. The first and primary thing is to lo-

cate the fundus, and if that cannot be done, it is useless to expect the examiner to locate the appendages; indeed, that subject is not allowed to be mentioned until the fundus uteri is located. But when a student has acquired the faculty of palpating the uterus readily, it is a simple matter to extend this accomplishment to a recognition of the ovaries and tubes.

Dr. W. EVELYN PORTER: The position of the lower portion of the uterus is the one feature to which the beginner attributes the greatest importance. The students as a rule when questioned as to diagnosis, will simply refer to a laceration of the cervix and misplacement of the uterus. That is the extent of what they get. The question is, how far we can go with this method of the doctor's, which is a most excellent one for ascertaining the position of the uterus, but beyond that, in going further it can be of very little help to us. I think one of the most important features in teaching in regard to the condition of the pelvis is in impressing upon the student the importance of going well behind the folds of the broad ligament. Ordinarily they will pass in front of the broad ligament and press against the bladder, having their hands entirely anterior to the uterus and appendages. The chief point which I always try to impress upon the student is, therefore, the importance of passing the examining fingers sufficiently far back to get well behind the *body* of the uterus in making an examination. I find in this way they will much more promptly get so they can palpate the uterus, and after a few days many of them can make an intelligent diagnosis of the condition of the uterus and appendages.

Dr. DUDLEY: I don't know that I can add anything to Dr. Goffe's remarks. It is a very good method. I might differ from it in some respects. My first object is to teach them the normal anatomy; I do not find that any of them know it. When they once get that they can make their diagnosis. It is no use to attempt to teach them the different methods of displacement until they know what the normal is, and what bearing injuries of the perinæum, the bladder, or cystocele, or rectocele might have upon it. They do not know a fecal impaction from a displacement backward, unless they first remember the normal anatomy. His method of teaching the deviations from the normal is, of course, excellent, very impressive, and the method that men can remember as long as they can remember anything, but my first object is to get them to understand

the normal anatomy and be able to differentiate a foecal impaction from a displaced uterus, or a retroverted uterus from a full bladder. We may have and we do have many cases where the uterus is in a normal position and still the body of the uterus is not displaced enough for even an expert in diagnosis to differentiate. I do not agree with Dr. Goffe in saying that any position of the fundus between the symphysis pubis and the promontory of the sacrum is normal.

Dr. WYLIE: I was interested in Dr. Goffe's method and it certainly seems a good one for what it teaches, and I think it is a proper way to teach beginners; but so far, my own experience in teaching it has been confined to graduates. The first thing is to educate the sense of touch. When a man has the sense of touch properly developed and educated, it is comparatively easy for him to make a diagnosis. What I found in students was an absence of the educated sense of touch. After they have it, it is easy enough to point out abnormal conditions, and when I have come across men incapable of making a diagnosis, and they have asked my advice, I have told them to cultivate the sense of touch. If you take a dispensary practice and examine thirty or forty women a day, and cannot develop the sense of touch, I would advise you to give the business up. In some men the connection between the hand and the brain is not quick enough for them ever to become artists. I have advised them to put different objects in the pocket, and practice telling what the things are, telling a five-cent piece from a penny, etc. I really believe it is only a question of time, when a man undertakes to study the *art* of medicine, that he will be educated in a definite way. In teaching in the Polyclinic, I have always looked upon it as teaching men who know something, or are supposed to know something. Certainly some of them do, and for that reason I have never made an effort to teach them in the primary way, because I have nearly always found in a class of any size a certain number of men intelligent enough to look at things in a different way, and I have taught those men. I would advise them simply to educate the sense of touch. I can recollect that when I first came to the Woman's Hospital I could not always find the cervix uteri; I had injured the index finger, but after prolonged use the connection between it and the brain seemed to be re-established, and it is a pretty good finger now. I can feel a great deal better with my left hand than with the

right. It is a fact that the two younger children that I have, boys, have both a remarkable sense of touch, and showed it even when they were in the cradle, in taking hairs off the blankets, and showed more ability to use the left hand for touch. Whether they got that from me or not I do not know.

Dr. PAUL F. MUNDE: The subject interests me. It may be known that I have been active in the teaching of medical students, particularly physicians, for a great many years, but I began myself about twenty-five years ago, and in an obstetrical way longer than that—about thirty years ago. I first acquired some experience in the touch of obstetrical cases. Gynæcology was not practised in those cases much; it did not amount to anything. In 1871 to 1872, Professor Leopold, now of Dresden, and I were in Vienna together, and we got the idea that we would like to find out something about the condition of the tubes and ovaries, whether the tubes and ovaries could be felt in a normal woman. We made arrangements with Professor Sigmund, who was the chief of the venereal service of the General Hospital in Vienna, where there were a great many women who had no local venereal disorder, but had general syphilis, and where we could have the opportunity, they not being unwilling to undergo an examination, and we could examine them as we wished. We examined perhaps 200, and we found that the tubes and ovaries were very easily discernible and we were quite happy about it. I made a great many notes at the time, and Dr. Leopold also. The object was to find out whether the normal annexa could be palpated. Of course, the position of the uterus was easy to make out. Most of the women had not entered the hospital for a venereal disease, and we simply examined them as we would normal women. They would come on the table almost nude, and it was perfectly easy to make an examination. At that time there was hardly anything in medical literature which pointed to that subject. Prolapse of the ovaries was first mentioned by Ritchie, of London, in 1874, and in 1878 I was the first man to read a paper on the subject of prolapse of the ovaries and their palpation before the American Gynæcological Society. I found that the rule was usually prolapse posteriorly; in 128 cases it was always prolapse posteriorly, with the exception of two that were prolapsed anteriorly. Now this is ancient history; but this was only eighteen years ago. I have usually followed the plan in my teaching, as can be demon-

strated by looking back at my books of 1880 and 1885, of teaching gentlemen first to find where the cervix uteri is, using the left index finger as a rule. I had been obliged to use my left because I had a felon on my right finger many years ago and got in the habit of using the left. I have always made one point, and that is, that the other hand should be placed on the abdomen, and the rest of the pelvic cavity be controlled between this hand and the finger in the vagina. I have noticed that the majority of gentlemen who come to the table at the Polyclinic do not do this, and I have always told them that an examination like that amounted to nothing and all they could feel was the cervix and the vaginal roof. Bimanual examination is indispensable to the examination of the pelvic organs of a woman. I believe there is, or was, a gentleman at the Polyclinic who said that one finger was all that was necessary in making a diagnosis. I am sorry that I do not possess the amount of digital acuteness of that gentleman. I cannot make a thorough examination of the pelvic organs of a woman without bimanual examination. I have always argued that when the cervix is found, the body of the uterus, if it is not in front or behind must be in the middle, and often it must be found by exclusion. It is not necessary to use a sound to determine the position of the uterus. The sound is an instrument that I employ only as a corroboration of a digital examination. As to the appendages, in the majority of cases in ordinary abdominal walls, when a man has acquired some amount of dexterity he can easily find them; but there are many cases where the appendages are in an absolutely normal position and you cannot make them out, and it is quite as satisfactory to me then as when I can, for then I know as a rule they are not diseased. If they are diseased, enlarged, of course you can make them out. I find that a limited uterine mobility from side to side means adhesions of the appendages as a rule. A limited uterine mobility from above downward may mean the same thing, still the uterus may be movable up and down. I am very much interested in this subject of diagnosis of the pelvic organs, because I think there is hardly anything one is so liable to be mistaken about as we are about these. Even the most expert examiner can make mistakes; but I think in the majority of cases one ought to be able to arrive at a pretty accurate diagnosis of the condition.

Dr. GOFFE: There are several important points brought out by

the various speakers. One is Dr. Dudley's remark as to anteversion. I teach that anteversion has been stricken off of the list of pathological conditions. If a uterus is anteverted it is in a normal position, and I say, call it normal position; the word anteversion is not allowed to be mentioned in the class-room. In regard to the *tactus eruditus* that Dr. Wylie speaks of: It is not an unusual experience for a student to examine a case and state his diagnosis, and eventually, by cross-questioning, find it is all wrong. He is apt to turn around and say: "Well, Professor, I suppose I have not the *tactus eruditus*." That matter has interested me. I do not believe the *tactus eruditus* resides in a man's finger at all. We get the information by the sense of touch rather than of sight, and that consists in cultivating the imagination, and making a mental picture of what our finger touches. Take a blind man for illustration: he will pass his fingers over a page of raised letters, and when he has gotten through he has just as clear a picture of that page in his mind as you have by looking at it, simply because he has cultivated the faculty of getting his information by the sense of touch, and when we have that I believe we have the *tactus eruditus*. Dr. Porter's suggestion that the finger should be carried well back before carrying it upward is a most excellent one, and it is the point that I have always insisted upon, that they shall go well back into the hollow of the sacrum. I only spoke of locating the fundus of the uterus, but, of course, my teaching goes to the extent of palpating the appendages, both diseased and normal, when it is possible to feel them.

*Tubular Drainage Through the Vagina for Chronic Cystitis, with
Report of Cases.*

BY NATHAN G. BOZEMAN, M.D.

(See page 34.)

Official Transactions.

G. H. MALLETT, Secretary.

TRANSACTIONS OF THE AMERICAN GYNÆCOLOGICAL SOCIETY.

Twenty-second Annual Meeting.

First Day, May 4, 1897.

The *President*, JAMES R. CHADWICK, M.D., in the Chair.

(Certain Papers with Their Discussion.)

Multiple Myomata in the Abdominal Cavity.

BY BACHE McEVERS EMMET, M.D., NEW YORK.

(See page 6.)

DISCUSSION.

Dr. R. STANSBURY SUTTON (of Pittsburg): The surgical treatment of fibroid tumors of the uterus has been a progressive evolution from the days of Kimball to the present time. I will not discuss the various methods of different operators. The only point I will touch upon is this: Is it essential, is it absolutely right to say, "You must undergo a surgical operation" to every woman who presents herself with a fibroid tumor? Before answering that question, I think we ought to say to ourselves, What is the mortality of fibroid tumors untreated by surgical means? The late Thomas Keith made the statement that not more than ten per cent. of all women with fibroids would die if left untreated, and that the mortality of an operation for their removal must be less than this to make it justifiable. I do not wish to be understood as saying "nay" to any woman who comes to me if she is entitled to an operation, but I would not operate upon a woman with a small fibroid which causes no distressing symptom. Operations are dangerous things in the hands of the best operators. Three times within my recollection I have said to young women who had accidentally discov-

ered the existence of a small fibroid which gave no trouble, "Do not be operated upon now," and each of these young women was dead within four days because she went to an inexperienced man, who operated upon her. I offer a plea for conservatism. Let us operate only when necessary, and not otherwise.

Dr. ARTHUR W. JOHNSTONE (of Cincinnati): This subject, for the last ten years, has been one of the most important in the eyes of the modern surgical world, and it should not be allowed to pass without discussion. I have very decided ideas on the treatment of fibroids of the uterus. I freely confess that I can not pile up statistics, as a great many men can, and the reason is because my teacher, Lawson Tait, is really a most conservative man, although he has the reputation of being a great cutter. I have probably seen not less than 500 cases of fibroid of the uterus, and have not operated upon more than 100 of them. I do not think every fibroid ought to be touched. They ought to be left alone if they cause no trouble. I recently had a case which will show my idea of conservatism. The patient was a very stout woman of forty-three years, who had a not very large multiple growth in the pelvis. The tumor seemed to be cystic, and she had been told that it was sarcomatous degeneration. I opened the abdomen in the expectation of finding a cystic tumor; instead I found a mass the size of a coconut with a pedicle about four inches thick. I also found that the appendages would be removed with difficulty, so I did nothing but close the abdomen. My mortality then was almost *nil*, but there was nothing especial in the case to demand operation. I held my hand, and think I was justified in doing so. I have not, however, given up removal of the appendages to stop the growth of a tumor, and have never seen a patient die as a result of the operation nor one that was not benefited by it. There is a sort of oedematous myomata, resembling lymphatoma, upon which the menopause, natural or artificial, has no effect, and nothing but the knife will stop it. This form of tumor rises like a dome, is smooth, and looks something like the pregnant uterus. These cases are rare; I have only seen five. I operated on all, and all are well. I have done twelve complete hysterectomies, and all have recovered. Where the cervix is comparatively healthy, my custom is to amputate at the os. I never try to close the cervix, for there is sure to be a certain amount of drainage. Finally, I think Dr. Sutton has struck the

key-note—conservatism. Now that the mortality of these operations is low, we are apt to go “wild,” and operate on every woman.

Dr. B. F. BAER (of Philadelphia): The two gentlemen who have preceded me have spoken in favor of conservative treatment of fibroid tumors of the uterus. We are all in favor of conservatism, of course, but I believe that conservatism in these cases, generally speaking, is in the direction of radical surgery—removal of the tumor, and, usually, removal of the uterus, above its attachment to the vagina. In some cases myomectomy is possible, but in the majority of cases supra-vaginal amputation of the uterus containing the tumor should be performed. This is the position I took in 1892, and this is the method I employed, although it seemed a little radical then. I have had a great deal of experience since. The mortality attending the operation, in experienced hands, is low. Of a hundred women with a fibroid tumor of the uterus, a larger number would die of the disease than as a result of operation. Therefore, it is a life-saver. The amount of suffering which is escaped by the operation can not be estimated. I do not believe that these tumors do not produce suffering. I can not believe it. I have seen a great many cases, and the patients have always consulted me because they suffered. It is true that it is dangerous to open the peritoneal cavity, because all surgery is dangerous, but it is not conservatism to decry an operation which has been so successful in relieving suffering and saving life. My own experience leads me to advise against waiting for the menopause. I have seen many women reach the age of fifty without being cured of their tumors. It seems to me that it is the exception when they do get well after the menopause. Therefore, I believe I am very conservative when I advise a woman to get rid of her fibroid. I relieve her suffering, and, possibly, save her life. A man must judge and act largely upon his own individual statistics. In ninety-five cases out of a hundred, I am ready to advise operation, and I believe that the principles established by me in 1892 are the correct ones, and worthy of imitation.

Dr. A. PALMER DUDLEY (of New York): I have been struck by the influence of American surgery on the present methods of performing hysterectomy abroad. I do not know that I can better illustrate this than by recalling the visit of a foreign surgeon to this Society a few years ago, who reported a number of cases

operated upon by his own method, and who I saw operate here. Not long ago I visited him at his home, and again saw him operate, and I noticed that he had modified his technique in many ways to conform with those of American surgeons.

In regard to the treatment of fibroid of the uterus, it is a continuation of the old idea that the change of life is a cure-all, to advise these patients to wait for the menopause to relieve them. If the menopause can cure them, why is not Hegar's operation the ideal one for these cases? And it is not. This waiting for the menopause is an idea of the old practitioner, and a bad one for us to advocate. The question of the treatment of these cases is a vital one, but no one method will suffice for all. Myomectomy is suitable for some cases, and hysterectomy is demanded by others. In order to decide which should be performed, it is necessary that a correct diagnosis be made.

Dr. WILLIAM T. LUSK (of New York): I think at heart we are all pretty well agreed as to the proper method of treating these cases, and our apparent difference of opinion is, perhaps, due to the fact that some of us see more cases which demand immediate operation than others do. I see a large number of cases with insignificant fibroids, which cause no symptoms, and whose existence has been accidentally discovered. A tumor of this kind may remain quiescent for years and cause no trouble; therefore, the case requires no immediate attention, but should be examined once a year, or whenever symptoms develop. In regard to the operation, myomectomy is preferable, wherever it is possible. In a large number of cases I have removed the tubes and ovaries, and do not regret it. This procedure is especially applicable to cases where the fibroid is below the pelvic brim. I am very glad to hear advocated the partial removal of the uterus, *i. e.*, leaving the cervix. This makes considerable difference in the after-condition of the woman. When total extirpation is done the resulting atrophy of the pelvic organs gives rise to many troubles—such as sinking of the vagina—which cause great discomfort.

Dr. J. M. BALDY (of Philadelphia): I have no objection to conservatism, if by this we mean doing what is best for the patient; it makes little difference whether this means operating or waiting. Several points are brought out by this way of looking at the subject. It is hardly worth while to debate whether or not fibroid tumors are

cured by the menopause, for a large proportion of them are not cured by it; but, on the contrary, are made worse. In regard to small uterine fibroids, I confess I do not see many such cases—they are few and far between. That patients with fibroids do suffer has been brought forward by Dr. Baer, who shows that they would not come to us for relief if they did not have symptoms. The long-continued, progressive anæmia, from which these patients suffer, seems to me sufficient to convince us that they do need relief.

In regard to treatment, each case is a law unto itself, but we must not forget that a fibroid is a surgical disease. Most cases call for hysterectomy, for myomectomy can be performed only in rare instances. As to the question of oöphorectomy in these cases, I think few of us believe that it has a beneficial effect. A tumor will sometimes disappear after oöphorectomy if the operation is *completely* and well done, but this is sometimes impossible. At times I have had to do hysterectomy in cases where needle punctures caused uncontrollable hæmorrhage. I have seen experienced men forced to do hysterectomy in order to avoid leaving ovarian tissue, and I have seen cases where hæmorrhage has continued, even when the oöphorectomy has been completely done. Hysterectomy is far superior, just as safe, and, in some cases, safer than double oöphorectomy. In spite of the fact that it is a very nice thing to say that we can not apply a given rule to all cases, the fixed rule in these cases is hysterectomy. The future of the patient must always be considered. We assume a great responsibility when we allow a patient to go out of our hands and drift into those of an unskilful and incompetent man.

Dr. T. A. REAMY (of Cincinnati): Those who are most radical in advocating surgical methods in the treatment of these cases play a great part. Most of us do the same by letting some of these cases alone. Although I do not believe that the menopause cures many of these cases, I do believe that oöphorectomy, in the early stage, arrests the growth of the tumor. It is illogical and unphysiological to suppose that the natural or artificially-produced menopause will arrest the growth of a uterine fibroid in a late stage. There are many who believe that a fibroid, if left alone, will destroy life, and in some cases this is true; but it is likewise true that in a great many cases fibroids exist for years, and sometimes attain a considerable size without giving rise to much discomfort, and without danger to life. Observations made in the deadhouse during the last twenty-

five years show that in many women fibroma were present which had never given rise to any symptoms, and whose existence was not recognized during life. My own observations convince me that a large number of women have fibroid tumors. A woman, just past the menopause, who for eighteen years had been employed in my family, died recently, and, at the autopsy, a large interstitial fibroid was found in the uterus. She had always menstruated regularly, and never knew or suspected she had a tumor. A practical application of these facts ought to be maintained, and, since in so many of these cases the tumor does not grow to any size, and does not destroy life, it certainly seems that its removal is not demanded. Should symptoms arise at any time, surgical measures can be resorted to. Since a larger number of experts are still living, and a larger number are being produced every year, there is no danger that these women in one, two, three, four, or five years, will not still have the opportunity to be operated upon. Since so many of these tumors cause no discomfort; since the growth of so many can be arrested by oöphorectomy, it seems to me that our friends on the other side of the question should allow some of the cases to take advantage of the more conservative treatment. And yet I am not opposed to the operation. I have done more hysterectomies during the past year than ever before—sixteen, with but one death. I am proud of the surgery that has reduced the mortality to five per cent., and which will, probably, reduce it to two or three per cent. I only ask that those women with fibroids which cause no symptoms be permitted to go on undisturbed until some such symptoms develop.

Dr. BEVERLY McMONAGLE (of San Francisco): I am conservative as well as radical, but it is necessary for us to express our views in order to find out what is conservatism, and what is not. It seems to me that an operation which is conservative for a woman during the child-bearing period, is not conservative for a woman who has passed that stage. If an old woman comes to us with a fibroid, which, by reason of its size or weight causes pain or discomfort sufficient to make her consult a physician, it is our duty to remove that tumor. In such a case, the best method is hysterectomy. If the patient is not past the menopause, we should choose an operation which will leave the tubes and ovaries, in order to preserve the reproductive function. Any operation which prevents a woman from bearing children is a bad operation. If myomectomy is done

when the tumor is small, the percentage of recoveries will be high. I argue that it is not conservative to remove the ovaries and tubes, nor to remove the ovaries and tubes with the uterus, when that tumor can be removed by myomectomy. It seems to me that more can be done by this operation than by anything else, and it is to be hoped that the gentlemen who are now leaving small fibroids alone will soon remove them. The strongest argument in favor of removal of small fibroids is the preservation of the reproductive function.

Dr. GEORGE F. ENGELMANN (of Boston): I must say it seems to me that the technique and the operation employed is less important than the operation for which the operation is performed. Speaking of fibroids in a general way, there is a great tendency nowadays to operate, knowing little of the clinical aspect of the case, and we know but little what to expect when the abdominal cavity is opened. My experience is that the vast majority of these tumors are not dangerous to life, and that many of them are perfectly harmless. They are very frequently found in the post-mortem room in the uteri of women who have died from other causes, and in whom they caused no symptoms, and did not interfere with the woman's capacity for work. As to the cessation of development of these tumors after the menopause, I do not think this is the case—the condition is apt to become worse; but I have seen a kind of retrograde metamorphosis take place. Cessation of growth may occur at any time, but what the conditions are that lead up to it I do not know. I have seen many of these cases, some where the tumor was very large, and was an annoyance only on account of its size, and I believe the suggestion of Dr. Sutton to be a good one—that we keep such patients under observation, and operate upon them at any time when this becomes necessary. We should also become more familiar with the various forms of uterine growth, for it is the character of the tumor—not the size—which makes the difference.

Dr. SETH C. GORDON (of Portland, Me.): I think I have been accused by my friends, never by my enemies, of being a little radical. I would, perhaps, be called radical by my friend Sutton—also by my friend Johnstone. He may be conservative, but I should not call him conservative, from my point of view. I do not know what the condition may be of women in Cincinnati, or in the Blue Grass region, from which my friend Johnstone comes, but I do know what

it is in the eastern part of the country. I know I have tried all these so-called conservative operations. I have done oöphorectomy for stopping the growth of a fibroid, and I have seen it do good in, say, one or two cases, where some form of degeneration took place after the operation. I now make no operation for removal of the ovaries and tubes without removing the uterus as well, and I dismiss oöphorectomy for fibroids by saying that I would not do it under any circumstances. I do a total hysterectomy, and can then say that I have either killed the woman or cured her. Most of the women I operate upon wish me to do the radical operation, for I can promise them that they will be well if they survive the operation. I operate upon every case of uterine fibroid when a woman comes to me with symptoms attributable to that fibroid. I do not care how large or how small it is. I think the statements made here to-day show that no woman is safe with a uterine fibroid that is giving symptoms, and, while I believe that in a few cases myomectomy can safely be done, and the woman be comfortable afterward, if she is a comparatively young woman, I believe the rule should be that hysterectomy be done. No living man can say that he can remove a fibroid from the uterus, and that it will not return. My own experience justifies me in making these very positive statements. Wonderful results are reported in the way of relief from symptoms, but it is only when we clear out the entire uterus, when we remove it with the tumor and both appendages, that we absolutely cure our patients. I am glad that the profession have nearly reached this opinion during the last five years.

Dr. THOMAS ADDIS EMMET (of New York): In regard to what was said in the paper about fibroid tumors not connected with the uterus, I wish to say that it is a well-known fact that these tumors may become transplanted from one place to another. I recall the case of a young woman who had a fibroid on the right horn of the uterus, and whose condition I improved by making applications to the uterus. She married and became pregnant, and the fibroid disappeared from the uterus. Shortly afterward a mass could be felt on one side, which proved to be an ovarian tumor, and when this was removed the fibroid tumor was found adherent to it, showing that the tumor had become transplanted.

I have always been conservative in my views, and am entirely opposed to removal of the uterus for fibroids without very serious

symptoms. I never perform hysterectomy if I can conscientiously avoid it. The operation has been done too often. I never hesitate to remove a fibroid if I can reach it by going up between the bladder and uterus or broad ligament. In 1862, I removed, piece by piece, a tumor from the anterior wall of the uterus, through the uterine canal. I did hysterectomy long before many of the men in this room did it, but, now that the operation has become so perfected, I hope it will not be performed so often. The time is not far off, I trust, when we will go to the beginning and study the genesis of fibroid tumors. It has been my good fortune to watch the development of two fibroids. In one of the cases, just after the menstrual period, I felt a roughness in the uterine canal, like enlarged follicles. I followed up the case for eighteen months, watching it closely, and finally removed a fibroid from the spot where I first felt the roughness. I do not think a fibroid will develop in a perfectly healthy woman, in whom the menstrual function is well performed, nor in a good breeder. The disease is clearly and closely related to the menstrual function, and I believe that these tumors begin to develop just after menstruation, having their starting point under the mucous membrane where there is the most functional activity. When we get to the point where we can examine the interior of the uterus, we will learn how they originate. In the meantime, I hope the attention of the profession will be turned in the direction of discovering the cause of their development.

Dr. CHARLES P. NOBLE (of Philadelphia): There is a great difference between *true conservatism*, which considers the best interests of the patient, and *false conservatism*, which does nothing; and it is to the best interests of the woman that our attention should be directed. In regard to what has been said of the effect of the menopause upon these tumors, there is no more fallacious doctrine than that which claims that a fibroid of the uterus is cured by the change of life. Twenty-five per cent. of those upon whom I have operated were women past the menopause. As to the removal of tubes and ovaries to arrest the growth of a tumor, I have known it to have a good effect in some cases and not in others. Dr. Johnstone states that he is conservative because he does not perform hysterectomy but removes the tubes and ovaries. I think it is as little conservative to remove the appendages as it is to remove the uterus. We are doing conservative work *only* when we preserve organs intact.

Myomectomy can be done in most of these cases, if they are operated upon early, and in this way the woman is cured, and the integrity of the organs is preserved. Nothing has been said about the common occurrence of these tumors among negroes. At this moment I have four of them in the hospital, who came to me from below Mason and Dixon's line to be relieved of their tumors.

As to the recurrence of the tumor after myomectomy, I think the percentage of cases in which this occurs is very low. There has been no recurrence in any of my twenty-two cases.

Dr. BACHE McEVERS EMMET (in closing): I have been investigating the genesis of fibroid tumors of the uterus, and have come to the conclusion that their development is largely due to disease of the uterine structure or to disturbance of the circulation in the muscular fibres of the organ.

The methods of operation have been so thoroughly gone over in the discussion that I will only say I wish to be placed on record as being conservative and operating only on those cases where the symptoms are marked, and evidently caused by the tumor. In many cases much can be done for the patient without operation.

(To be continued.)

ABSTRACTS.

THE STATUS OF GYNÆCOLOGY ABROAD.

GREAT BRITAIN.

Fibroma of the Ovary and Ovarian Ligament, with Pathological and Clinical Reports of a Series of Eight Cases of Fibroma of the Ovary, and One of the Ovarian Ligament, Treated by Operation.

H. BRIGGS (*British Medical Journal*, May 1, 1897) speaks of the certain insignificant fibromatous growths of the ovary which have been discovered accidentally *post-mortem*. These are of no clinical importance. Dr. Joseph Wigglesworth presented the writer, more than ten years ago, with an ovary containing three small central fibromata, the largest five-eighths of an inch in diameter, associated with large fibroids of the uterus, in a woman aged forty-four years, who died from another cause at Rainhill Asylum. Microscopic examination showed the ovarian growths to be pure fibromata and the uterine, fibromyomata. The occasional concurrence of uterine fibroids and ovarian "fibroids" had been noted, and Stafford Lee had described their structure as identical. Virchow has warned us not to structurally confuse so-called "fibroids" of the ovary with fibroids of the uterus. Dr. Wigglesworth's specimen is of value, as its structure harmonizes with Virchow's observation, but also for its rarity, as such are not often met with. Rokitansky describes a variety of ovarian fibroma as "originating in the cicatrix of a corpus luteum, and being rarely larger than a pea." Rokitansky cited two cases. Instances of larger growths of pathological interest have been published by Kolb and Jenks, Goodhart, Walsham, Crisp, and others. Dr. Edward Crisp, when he exhibited the specimen referred to (*Ibid.*, 1877), pointed out the ease with which the growth might have been removed during the life of the patient; this was over seven years after Dr. J. L. Martin had removed a hard, fibrous tumor of the ovary, which the late Sir Spencer Wells and Dr. Graily Hewitt were unwilling to accept at the time as ovarian. In

the light of subsequent knowledge, Dr. Martin's case was undoubtedly one of ovarian fibroma. At the time he was able to refer to but "two cases of rather rare fibrous tumors of the ovary," mentioned in Clay's translation of Kiwich. The late Sir Spencer Wells operated twice in 1872 for what were really fibrous tumors of the ovary. No comment was made on the independence of the corresponding fallopian tube in relation to solid ovarian tumors until Leopold's paper in 1874. Leopold, in 1876, alleged that solid ovarian tumors were more frequent than had been previously met with, and gave a valuable collection of fifty-nine cases, including fibromata, sarcomata, and carcinomata. Nineteen of the fifty-nine cases had been described by their respective authors as fibromata. Leopold inferred that some of the nineteen were probably sarcomata, there being no sharp line between fibroma and sarcoma. When spindle or mixed cells have been a conspicuous feature in structure, a sarcomatous, or suspiciously sarcomatous, tumor has been usually the verdict.

The writer gives the following table of eight cases of fibroma of the ovary and one of fibroma of the ovarian ligaments:

I.—FIBROMA OF OVARY (one double).

Date.	Operator and Previous Medical Attendant	Initials of Patient	Age of W., M., S. Children, & Abortions.	Symptoms.	Physical Signs.	Operation.	Structure of Tumor.	After-History to March 31, 1897.
1 1891 Oct. 21	Dr. Briggs Dr. Lloyd, St. Asaph	E. K.	55 W. 0 children 0 abortion	No pain, except on exertion. Tumor "as large as an egg" when found in May, 1891. Menopause 2 years ago	Uterus small; large tumor independent of it. Ascites	Long incision (7½ x 6¼ in.) solid, except one superficial cyst. Pedicle broad and thick, secured in 4 sections. Right ovary unaffected	? Fibroma ? Myofibroma (See text)	In good health, 5 years after-ward.
2 1892 June 24	Dr. Briggs Dr. Newington, Rock Ferry	B. A.	22 S.	No pain. Tumor discovered by patient 3 months ago. Bladder slightly irritable. Menstrual history normal except scanty in May, omitted in June, 1892	Uterus small; large tumor independent of it. Ascites	Tumor (7½ x 6¼ in.) solid with several mucoid patches. Opposite ovary healthy	Cellular fibro-oma with mucoid patches	In good health, 4½ years afterward.
3 July 22	Dr. Briggs Dr. Britling, Blackpool	M. E. W	48 M. 5 children (youngest 10 years old)	No symptoms, except enlargement of abdomen, noticed 14 days before admission into hospital. Menopause 6 years ago	Uterus 3 in.; (Double ovaryotomy). Large tumor (7x7 in.), small tumor (2x2 in.), 3 pints ascitic fluid	(Double ovaryotomy). Large tumor (7x7 in.), small tumor (2x2 in.), 3 pints ascitic fluid	Myxofibroma	In good health, 4½ years afterward.
4 1894 June 15	Dr. Briggs Dr. Morrish	A. S.	30 M. 2 children 1 abortion	No pain (sometimes the tumor felt sore) 18 months ago she first found the tumor "the size of an egg"	Uterus 2½ in.; heavy solid tumor independent of the dent of it	Tumor (7½ x 5½ in.). Right ovary normal. Ascites	Spindle-celled fibroma	Borne one child since operation. In good health, 2½ years afterward.
5 Sept 14	Dr. Briggs Dr. Tisdall	A. G.	68 S.	No pain, 3 months ago she accidentally discovered the tumor, which has grown rapidly since	Uterus 2½ in.; cervix elevated 7¼ lbs. adherent to sigmoid flexure, cæcum and appendix also to pelvic peritoneum	Tumor (11x7 in.) (weight 7¼ lbs.), adherent to sigmoid flexure, cæcum and appendix also to pelvic peritoneum	Fibroma with spindle cells	In good health, 2 to 3 years afterward.
6 1896 Jan. 10	Dr. Briggs Dr. H. T. Shaw	Mrs. W.	32 M.	Married July 11, 1895. Pain at intervals for 4 months, always relieved by rest	Uterus small; solid tumor independent of it. Ascites	Tumor (4x3 in.). Left ovary normal	Spindle-celled fibroma	In good health, 10 months afterward.
7 Aug. 20	Dr. Briggs Dr. Robinson, Runcorn	A. H.	39 M. 11 children 9 abortions	Pain occasionally on exertion for 1 year. Bladder irritable	Uterus 3 in.; solid tumor independent of it. Ascites	Tumor (2x2 in.). Left ovary normal	Spindle-celled fibroma	In good health, recent.
8 Sept. 10	Dr. Briggs Dr. Cowe	M. H.	29 M.	Pain for 12 months, 4 months pregnant	Stony hard tumor independent of uterus	Tumor (3x3 in.). Right ovary normal	Almost structureless, a calcified fibroma	In good health, recent.

II.—FIBROMA OF OVARIAN LIGAMENT.

1 1892 March 7	Dr. Briggs Dr. McDougall	A. J.	35 S.	Pains 6 to 7 years, not totally relieved by rest.	Hard tumor of irregular outline, independent of uterus	Tumor the size of the closed fist of the female adult; Ovaries and tubes not disturbed	Dense fibroma	In good health, 4½ years afterward.
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Detailed histories of each case are given, with illustrations and microphotographs.

Summary of the pathological structure of the tumors (see table): In Cases 1 and 5 there was a large proportion of fully-formed fibrous tissue; in Case 1 the spindle cells were unusually long and wavy; in Case 5 the spindle cells were shorter. No one has suggested, after an examination of the microscopic sections, that the cells in Case 5 are anything else than connective tissue cells, but the long, wavy spindle cells in Case 1 are thought by Professor Boyce to belong to involuntary muscle; hence the writer labeled myofibroma(?) or fibroma(?). In the others: Case 2, a cellular fibroma with mucoid patches; Case 3, a sarcomatous-looking myxofibroma, examined by Professor Boyce recently, and pronounced suspicious sarcomatous structure; Cases 4 and 6, spindle-celled growths; Case 7, spindle-celled growth (recent). Degeneration was shown, partial mucoid in Case 2, and complete calcification in Case 8. As the question of fibroma *versus* sarcoma, the evidence from the writer's cases is largely, if not altogether, in favor of fibroma in heavy, solid, primary ovarian growths. The cases published by Mr. Doran and those of the writer may go far to prove among the heavy, solid, primary ovarian growths a larger proportion of ovarian fibroma than previously acknowledged, the subsequent histories of the patients being of the greatest importance.

Eighteen Consecutive Cases of Intra-abdominal Hysterectomy for Fibroids.

WILLIAM DUNCAN (*The Lancet*, May 15, 1897) gives the following table of eighteen consecutive cases of intra-abdominal hysterectomy for fibroids:

EIGHTEEN CONSECUTIVE INTRA-ABDOMINAL HYSTERECTOMIES.

Case No.	Date of operation.	Where performed.	Nature of tumor.	Indication for operation.	Result.	Remarks.
1	1896 May 1st	Chelsea Hospital	Multiple myomata reaching up to umbilicus	Profuse metrorrhagia	Cured	Ether; bronchitis after operation, otherwise recovery was uninterrupted.
2	June 23d	Private	Multiple myomata reaching above umbilicus	Increasing growth; no hæmorrhage	Ditto	Recovery uninterrupted.
3	October 22d	Middlesex Hospital	Ditto	Profuse metrorrhagia with increasing growth	Ditto	Ditto.
4	October 23d	Chelsea Hospital	Single soft myoma, size of pineapple	Increasing rather rapidly; no hæmorrhage	Ditto	Ditto.
5	October 27th	Private	Multiple myomata filling pelvis and reaching above umbilicus	Retention of urine; no hæmorrhage	Ditto	Ditto.
6	Dec. 31st	Middlesex Hospital	Multiple myomata up to umbilicus	Progressive growth; no hæmorrhage	Ditto	Ditto.
7	1897 Jan. 8th	Chelsea Hospital	Ditto	Profuse metrorrhagia	Ditto	Ditto.
8	Jan. 22d	Middlesex Hospital	Cystic myoma; size of foetal head	Ditto	Ditto	Ditto.
9	Feb. 12th	Middlesex Hospital	Multiple myomata reaching nearly up to umbilicus	Ditto	Ditto	Ditto.
10	Feb. 19th	Chelsea Hospital	Ditto	Ditto	Ditto	Ditto.
11	March 12th	Chelsea Hospital	Multiple myomata reaching up to umbilicus	Increasing in size for the last year, causing numbness in left leg and difficult defæcation	Ditto	Ditto.
12	March 15th	Middlesex Hospital	Multiple myomata filling abdomen reaching nearly to xiphoid cartilage	Increasing growth and metrorrhagia	Died	Pulmonary embolism on eighteenth day.*

EIGHTEEN CONSECUTIVE INTRA-ABDOMINAL HYSTERECTOMIES.—CONTINUED.

No.	Date of operation.	Where performed.	Nature of tumor.	Indication for operation.	Result.	Remarks.
13 44	March 18th	Middlesex Hospital	Multiple myomata reaching up to umbilicus, expanding the whole cervix and filling Douglas's pouch	Pressure symptoms; frequent retention of urine	Cured	Recovery uninterrupted.
14 37	March 19th	Chelsea Hospital	Multiple myomata size of small foetal head	Profuse metrorrhagia and retention of urine	Ditto	Ditto.
15 50	March 19th	Chelsea Hospital	Multiple myomata filling abdomen below umbilicus, filling the right broad ligament and expanding cervix	Progressive growth and metrorrhagia	Ditto	Secondary hæmorrhage on fourteenth day. [†]
16 40	March 22d	Private	Single myoma reaching one inch above umbilicus	Metrorrhagia	Ditto	Recovery uninterrupted.
17 35	April 1st	Middlesex Hospital	Multiple myomata extending nearly up to umbilicus	Metrorrhagia	Ditto	Ditto. [‡]
18 40	April 1st	Middlesex Hospital	Myoma filling pelvis and expanding both broad ligaments	Retention of urine	Ditto	Ditto.

* This patient (Case 12) had not a single bad symptom for eighteen days after the operation, the temperature continued normal the whole time, and she was considered convalescent. On the eighteenth day she ate a hearty dinner; an hour later, whilst using the bedpan, she suddenly fell back and died in a few moments. The post-mortem examination showed death to be due to a large pulmonary embolus, which had its origin in the internal iliac vein on the left side. The uterine stump appeared perfectly healthy and the peritoneal flaps over it had become firmly united. There was not a trace of any peritonitis.

† This patient (Case 15) was a very pale, unhealthy-looking woman. On the fourteenth day after operation she had a rather profuse hæmorrhage from the vagina, and a tumor formed in the left side of the abdomen reaching up to the umbilicus. The woman was somewhat collapsed. She was put under ether and transfused with four pints of saline fluid, after which the abdomen was cleared of blood and clots from between the layers of the left broad ligament, three large and long forceps were put on bleeding vessels deep down by the side of the uterine stump, packed round the forceps and the cavity left after the blood was removed with iodoform gauze, and the abdominal incision closed. The gauze was removed and the forceps were taken off after forty-eight hours, and an india-rubber drainage-tube was inserted. An uninterrupted recovery followed.

‡ This case (No. 17) was unusually difficult one as the myoma was complicated by a suppurating cyst, the size of a fist, between the layers of each broad ligament, both cysts ruptured during removal and the pus escaped into the pelvis. The posterior layers of the broad ligaments were sutured together in the middle line from below upward, the broad ligaments thus forming one cavity in which was the uterine stump. The cavity was packed with iodoform gauze and its upper margin carefully united to the parietal peritoneum at the lower end of the abdominal incision, leaving, of course, an opening through which the gauze passed. The rest of the abdominal opening was then closed in the usual way. The patient convalesced without a single unfavorable symptom and the cavity rapidly filled up from the bottom.

Prior to the performance of the foregoing eighteen cases the writer had adhered to the extra-abdominal method of treating the stump by means of a clamp, "with a more or less high mortality." He describes in detail his technique in intra-abdominal hysterectomy, the essential points of which are: a free opening of the parietal peritonæum; next the ligation of the broad ligament, near the pelvic wall, by a double silk ligature, the inner ligature being drawn by a sawing motion through the broad ligament an inch or more nearer the uterus, and tied. The broad ligament is then cut between the ligatures leaving the ovary and tube attached to the uterus, and the ovarian vessels secured. The peritonæum is then divided across the front and back of the uterus, about two inches above the attachment of the bladder, and carried laterally to the incisions in the broad ligaments; the anterior and posterior peritonæal flaps are then stripped down until the uterine arteries are exposed on both sides. These vessels are then ligated securely, the uterus and tumor is then pulled forward, and the posterior peritonæal flap stripped down completely. The uterus and growth are then cut across at the level of the ligated uterine vessels and removed. A V-shaped piece is then cut out of the stump, the flaps of the stump are then carefully united by a continuous silk suture, and lastly the two peritonæal flaps are united over the stump by a continuous silk Lambert suture, beginning at the stump, the flaps of the stump are then carefully united by a stump of the other broad ligament on the other side, leaving a crescentic-shaped line of sutured peritonæum with its concavity backward. The pelvic cavity is then carefully sponged out, the omentum is drawn down so as to lie against the line of sutures. The abdominal wall is then sutured in three layers, viz.: (a) the peritonæal edges with continuous catgut suture; (b) the sheaths of the recti muscles with interrupted fine silkworm gut; and (c) the superficial structures also with interrupted silkworm gut.

Observations.—The writer prefers the above method to complete removal of the stump, cervix and all (pan-hysterectomy), but admits that he has done but one complete removal. He believes that if the peritonæal flaps cover the stump accurately the danger of sepsis from the cervix is averted. The peritonæal flaps should be cut long, in order to turn in the edges, after the Lambert method. Tears should be avoided in stripping the peritonæum off the growth. Cases where tumors furrow into one or both broad ligaments are the most

difficult to manage. He advises in these cases to ligate all bleeding points in the pocket, and then obliterate it by suturing the sides of the pocket with a continuous silk suture, beginning at the bottom of the pocket, and, closing it upward with buried sutures, then cover it with the peritonæal flaps before described.

HOLLAND.

The Ovary During Menstruation and the Formation of the Corpus Luteum.

POMPE VAN MEERDERVOORT (*Nederlandsch Tijdschr. v. Verlosk. en Gynacol.*, Dec., 1896) remarks that it has long been known that the ovary during menstruation increases in size and loses its flaccid, doughy feel, becoming elastic and tense; and it has been possible to explain some of the changes that occur at this time by the removal of a number of ovaries during and after menstruation. The specimens were stained with hæmatoxylon, eosin, and orange, the last of which stains the blood and reveals the finest capillaries. The stroma of these ovaries appears particularly rich in nuclei, and there is more or less transudation from the vessels in the medullary substance. About the follicles, as soon as they begin to increase in size, a golden-yellow stripe appears, which is a fine network of capillary vessels. With the continued growth of the follicle and zona granulosa a layer of cells is differentiated from the stroma situated within this capillary band; these cells become swollen, the capillaries dilated, and the band broader and broader; the swollen capillaries may burst, and extravasation into the follicle occur. Still the ring of vessels becomes broader, and the follicular cells begin to be changed to theca cells, while oftentimes an extravasation is simulated by the extreme dilation of the capillaries.

We may here note the existence of certain isolated follicles that present a shrunken appearance; these can not have burst, being too far from the surface, and showing still several strata of epithelial cells; but the arrangement of the dilated capillaries in their shrunken walls is much the same as that in the walls of the corpus luteum to be presently described; giving one the impression of a similar method of formation—a sudden projection through the, as yet, partially-developed theca cells.

As the follicle grows, the theca cells gradually develop, the surrounding ring of vessels being limited by a corona of arteries and veins from which it arises. If the growth of the follicle still goes on, the wall must burst, generally during the menstrual congestion; the contents escape, the follicular insertion collapses, the theca interna is doubled up, hæmorrhage occurs, and the corpus luteum is developed. At the insertion of the follicle bundles of stroma elements project, having one or more apices and broad bases, the latter entering the theca at a sinus, so that there is a sort of vertebrate construction. Microscopically, these bundles are made up of stroma elements and large arterial vessels; there is always a small artery running perpendicularly to the apex, sometimes several, many times also a dilated vein; many capillaries run from these bundles into the theca, to return into the bundles.

No proliferation of the cells in the bundles could be discovered. It therefore seems probable that their function is a passive one; that they originate when, during the menstrual congestion, the vessels are powerfully dilated, thus pushing in and folding the follicular wall, the points of greatest congestion penetrating first; *i. e.*, the points where the arteries, with their ramifications, are situated, and giving rise to the folds; here the bundles will be formed, varying in size with the number and size of the vessels. With the formation of the fold the course of the arteries change to the perpendicular, and it is at these folds—the most vascular points—that the theca will burst when the menstrual plethora occurs. Thus the wrinkled appearance is given to the broken follicle. With the bursting of the follicle and the decrease of intrafollicular pressure, the stroma is drawn along with the vessels into the cavity. In the central part of the theca the accumulation of capillaries is greatest, and here it is that the hæmorrhage occurs; the granular zone separates with some of the theca cells, and the coagulum becomes organized. With this maximum dilatation of the vessels the theca cells have fulfilled their purpose, and involution begins.

The author believes that the theca elements are stroma cells, not epithelial cells. Schottlaender and others have assumed a proliferation of the theca from a special layer of cells about the follicle. The author finds no evidence of such proliferation; on the contrary, as soon as the follicle increases in size, and with the development of the vessels, the theca cells appear. These cells, while not yet

markedly developed, are displaced toward the periphery; even in the unchanged stroma we find a few cells rich in protoplasm, and with very dark nuclei. These cells we find everywhere, and at all times in the ovary, and we may, therefore, conclude that they are normal constituents of the ovarian stroma. We may observe these cells yet more plainly in normal involution of the corpus luteum; there they are seen in the parts that have returned into the ovarian stroma; losing their protoplasm, but retaining their nuclei, which deepen in color, they remain in rows between the vessels, gradually disappearing with them. They can be identified in the ovarian stroma during pregnancy, and even sometimes during menstruation. In further support of this view, the author describes a dilated ovary, removed from a patient that had a fibromyoma of the uterus, in which there was a corpus luteum with a sound theca; the stroma surrounding and penetrating the theca was completely degenerated and hyaline, showing that in this case there could be no question of proliferation.

The theca then develops from the already existing theca elements situated between the blood- and lymph-vessels next the follicle. If the follicle burst in the intermenstrual period, with the menstrual congestion, the extension and folding of the theca remain within definite limits. On the contrary, if gravidity occur, the increased blood supply causes a greater corrugation of the theca, not from proliferation of its elements, but from the dilatation of the capillaries, and, for a short time, from the swelling of the theca cells. With the greatest dilatation of the capillaries and the greatest increase in size of the theca cells, bursting occurs, generally with hæmorrhage; the capillaries shrink, and in the cavity of the follicle a fine fibrillary tissue arises which gradually loses its nuclei; the granular cells, so far as they have remained, degenerate; the theca elements decrease in size, fatty droplets appear in their protoplasm, while the nuclei grow smaller and darker; the vessels join one another, until finally the vessels and theca elements have returned to their normal condition, forming the ordinary stroma tissue, and ready to develop in the same manner a second time, should the conditions require.

(A. D. CHAFFEE, New York)

OBSTETRICS.

UNITED STATES.

The Therapeutic Application of Chloroform in Labor.

JOHN N. APSHUR, of Richmond (*Virginia Med. Semi-Monthly*, March 12, 1897), says that while the administration of chloroform in labor has become almost a matter of routine, and is generally considered safe, a careful observation for many years has tended to make him question its utility in many cases, and to convince him that in some cases it actually adds to the peril, and prolongs the suffering. It should be remembered that labor is a physiological function, becoming pathological only when abnormal conditions exist, such as malformed pelves, bad positions, or deformities of the child, or when interference in behalf of the mother or child becomes necessary. Such cases belong to the domain of the surgeon, and the question of chloroform is simply the necessity for an anæsthetic. Or, again, in cases where there is danger to the mother from convulsions caused by systemic conditions. But the object of this article is not to concern itself with such cases, but with so-called normal labors. These questions naturally arise: in what cases should chloroform be administered? at what stage of labor? what dangers arise? and at what stage? the best means of combating them? and, finally, *is it justifiable* to administer chloroform in natural labor progressing with satisfactory rapidity?

In order to answer these questions satisfactorily, the nature and effects of chloroform narcosis must be understood. Chloroform diminishes the excitability of the muscular system and its capacity for work. It interferes with oxidation of the blood, and thus becomes toxic to the foetus. In addition to the cases in which surgical interference is demanded we may include cases in which the pains are nagging and exhausting, also cases of rigid os with great nervousness. As to the time of administration, it should never be given until the latter part of the second stage of labor, and should be discontinued as soon as the occiput has passed the ostium vaginæ. But the most serious question is the dangers arising from the use of

chloroform. Diminution of muscular excitability renders the pains less potent, and there is greater danger of hæmorrhage due to uterine inertia. Subinvolution, with all the ills that follow in its train, is almost inevitable. Not only so, but labor may be almost suspended, making an instrumental labor a necessity. The interference with the oxidation of the blood without doubt increases the number of still-births. Nor are these the only dangers. Though few deaths are reported from chloroform in obstetric practice, yet undoubtedly many deaths occurring within forty-eight hours after delivery and reported as heart-clot, etc., may be due to the depression following the administration of chloroform. In cases where the uterine contractions persist, and the woman holds her breath to more efficiently "bear down," she is in a favorable condition for the occurrence of epileptiform syncope if chloroform is being administered. Without exception, whenever chloroform is used, a full dose of ergot should be given as soon as the head is delivered. It is also well to give ten grains of quinine at the beginning of the second stage of labor. Belladonna or nitroglycerine may also be used. A hypodermic injection of atropine (gr. 1-120), or sulphate of strychnia (gr. 1-60), will add to the safety of the patient. In view of the dangers above mentioned, it is urged that chloroform should be placed upon the same platform as other drugs; never to be given as a routine practice; or, in response to the pleadings of the patient, and simply to diminish pain, but only when the indication in the case imperatively demands it.

A Series of Complicated Labors: Shoulder Presentation; Expulsion of Child with Head Doubled upon Trunk.

BENJAMIN EDSON (*Med. Council*, Phila., Feb., 1897,) says that, as a rule, complications in labor result from contracted or distorted pelves, with small birth-canals and a large foetus, but an unusually large pelvis may cause complications as well. The case of Mrs. C., of Brooklyn, illustrates this. She is twenty-four years old, weighs over 200 pounds, and has a uniformly enlarged pelvis. She was confined in 1893 for the first time, a shoulder presentation; the child was still-born. The writer does not know the particulars of this labor, as the patient was not under his care then. In 1894 Dr. Edson was called in consultation, found the patient in

labor, with arm and shoulder presenting at vulva. The child was turned and delivered, breech first; child still living. In September, 1895, Dr. Edson was called; found her in labor, with several hands and feet presenting. "After duly assorting them," she was delivered of twins at about six months of utero-gestation. They lived but a day or two. In June, 1896, she was again in labor. The doctor found the membranes ruptured, and the right arm presenting; pains almost continuous and strong. An attempt to replace the arm in the knee-chest position failed. An assistant was sent for, with the intention of giving chloroform. In the meantime, with the patient on her back, the doctor "balanced the child above the mother's pelvis." The pains became violent, the shoulder progressed rapidly, the head doubled upon the left shoulder and chest, and head and chest were delivered *en masse*, the breech following. The child weighed ten and one-half pounds. Both mother and child did well. It is hardly necessary to say that the mother's pelvis was spacious. Her abdomen was extremely pendulous, extending, when in a sitting position, beyond and below her knees. Most writers admit the possibility of such a mode of delivery only when the child is small or immature and the birth-canal unusually large. In this case the child was at full term and well developed, was born alive and is still living.

AUSTRALASIA.

Unusual Case in Midwifery Practice.

BERNARD LOUGHREY, of Melbourne (*Intercolonial Med. Jour.*, of Australasia, Dec., 1896), reports a case of labor, interesting because of the unusual number of complications.

The patient was thirty-two years old, had had five children and two miscarriages, had been curetted after each miscarriage. In September last, when seven months pregnant, she was taken with severe hæmorrhages, coming on without warning; these persisted, at intervals for two days, when labor pains commenced, and Dr. Loughrey was called. On examination, he found the cervix partially dilated, and a complete placenta prævia, which was detached from the os for a short distance; the pains frequent but ineffectual. For over an hour it was impossible to separate the placenta sufficiently to rupture the membranes. But at length one side was

detached, and the membranes ruptured. A breech presentation was delivered as rapidly as possible, the child being livid and apparently lifeless. After twenty minutes of artificial respiration, the child was breathing well, and an attempt was made to express the remaining portion of the placenta. The uterus was unusually distended, and no impression could be made upon it. On inserting his hand in the uterus to peel off the placenta, he found another child with unruptured membranes in utero. After removing the first placenta and membranes, the second membranes were ruptured and a second child appeared, with foot and hand presentation. This was delivered alive and well, the placenta quickly following. The children, both males, were wrapped in cotton and placed near a fire, but, owing to a sudden change in temperature, both children died the next day. The uterus contracted promptly, and recovery was uneventful.

GREAT BRITAIN.

An Unusual Case of Tubal Abortion.

J. BLAND SUTTON (*The Lancet*, February 13, 1897) reports a curious case of tubal abortion, which demonstrates the fact that, under certain conditions, tubal abortion can be differentiated from tubal rupture by clinical signs. A married woman, aged forty-one years, the mother of four children, was last pregnant in May, 1886. From that date she menstruated regularly until June, 1896. In that month, and in July, August, and September following, the usual menstrual flow was on each occasion very scanty, merely a "slight loss." July 28th, the woman had severe pain in the lower part of her abdomen, lasting three hours. August 14th, a similar attack occurred. September 15th she again suffered great pain, which lasted five days. The pain diminished in severity, but did not wholly disappear, and she applied at the Chelsea Hospital for Women for relief, where she was examined by Dr. Arthur Giles, who detected a swelling in the left half of her pelvis. From the history and the physical signs, he considered the case as tubal pregnancy, and very probably tubal abortion. The writer found, on examination, the left half of her pelvis occupied by a semi-solid swelling, which extended into the false pelvis, and could be felt above the brim. The cervix was safe and patulous. The uterine cavity was three

and a half inches in depth. There was slight bleeding from the uterus. October 19th cœliotomy was performed. A uniform-shaped clot, about two and a half inches in length, was found in a fold of omentum; beneath it a second clot of the same shape, but much larger was found, and beneath this in the recto-vaginal fossa a third clot of exactly the same shape but twice the size of the preceding was found, and also removed. A rounded, hard body was felt in the left tube. The tube, ovary, and adjacent parts of the mesosalpinx were removed. The right tube and ovary being normal were not disturbed. The patient made a quick and complete recovery. The clots were all uniform in shape; the exterior of each was laminated like the blood in the wall of a sacculated aneurism or in the sac of an old hæmatocele of the tunica vaginalis testis. The central parts of the clots consisted of ordinary coagulated blood. The hard body in the tube was a "mole," which on microscopic examination in cross-sections showed many chorionic villi. The ostium abdominale of the tube was widely patent, and the ampullary wall thick, succulent and *entire*. The case was, therefore, one of "incomplete tubal abortion," but peculiar in this respect: As the blood collected and distended the tubal ampulla it firmly clotted, and was then expelled, with pain, through the tubal ostium into the recto-vaginal pouch. The "delivery," so to speak, of each clot coincided with each attack of pain, in July, August, and September.

The only recorded case in any way parallel is by Noble: that of a case of tubal abortion in which the blood clots in the pelvis "were coiled up as though they had been ground through a sausage machine." This was due to a continuous slow bleeding in the tube, the clots being forced out as they formed in a sausage-shaped mass.

The shape of the clot in the diagram of the writer is exactly that assumed by the ampullary section of the fallopian tube when in the condition of hydrosalpinx.

*Undiminished Mortality from Puerperal Fever in England
and Wales.*

CHAS. J. CULLINGWORTH (*British Med. Jour.*, March 6, 1897), made his annual address before the Obstetrical Society of London on the above subject. After some introductory remarks, he spoke of the work of Dr. Boxall, some three or four years before, who was re-

quested by an insurance company to prepare some statistics relative to the death-rate from child-birth. The result of his investigations showed that, instead of having diminished, the death-rate from puerperal fever had considerably increased in England and Wales. A table showing in detail the number of deaths each year, from 1847 to 1895, inclusive, was given. It will surprise many to learn that since 1881 the number of deaths and the ratio per thousand have been in excess of those in previous years. It is not pretended that the returns are exact; on the contrary, they probably fall below the actual figures, as there is a natural tendency on the part of medical men to avoid attributing deaths directly to the effects of child-birth. But the causes of error are not limited to a single year, hence do not affect the comparison of one year with another. The mortality returns are arranged under two heads, viz.: (1) puerperal fever, and (2) accidents of child-birth. Under this latter head are included cases of hæmorrhage, eclampsia, puerperal mania, pulmonary embolism, etc. Deaths occurring from pre-existing disease are not counted. In London the total death-rate from child-birth has diminished, but this is due to a lessening in the accidents of child-birth; puerperal fever, on the contrary, is accountable for more than one-half the total number of deaths instead of less than one-third, as formerly. Dr. Williams, Medical Officer of Health for the County of Glamorgan, in a paper read in 1896, gives the record of deaths from puerperal fever as found in the different sections. It is much greater in the rural districts than in large towns. In the latter the services of a physician or a trained midwife are readily obtained, while in the mining communities and thinly-settled districts the confinements are usually under the care of ignorant and unskilled women, whose only claim, in many instances, to any knowledge of obstetrics is that they are mothers themselves. Dr. Williams states that, from his experience in Wales, he can prove, without doubt, that midwives often spread puerperal fever broadcast.

In the lying-in hospitals puerperal fever has practically become a thing of the past, due to the introduction of antiseptic treatment, but in private practice a corresponding improvement has not taken place. It was not to be expected that those who had been a long time in practice would adopt at once what seemed to them not only new but unnecessary methods. But as time passed on and younger men came upon the scene, it was not unnaturally hoped that a mor-

tality which had been shown to be preventable would show some signs of diminution. How is it that this hope has not been realized? Either the profession has not confidence in the methods proposed for stamping out puerperal fever, or it has failed to carry out those methods with the thoroughness that can alone insure success. Are the teachers of midwifery sufficiently careful to impress upon the minds of the students, both by precept and example, the importance of this subject? Are they careful never to convey, by thoughtless word or careless act, the impression that the rigid adoption of antiseptic measures is excellent in theory but not of supreme importance in practice? If the teachers are not faithful, is it to be wondered at that the students go out into the world forgetful of how much depends on minute detail and satisfy their consciences by pouring a few drops of carbolic acid or a drachm of tincture of iodine into the water in which they wash their hands or by bidding the nurse use a similar preparation as a douche?

It is clear that something is wrong. It has become the fashion to talk much of asepsis as though antisepsis had had its day. But it must be borne in mind that the excellent results in the hospitals have been due to the scrupulous use of antiseptics. In other branches of surgery asepsis can be secured by sterilization, but this is impossible in midwifery practice, and reliance must be placed upon antiseptics. As a matter of experience, those who are most diligent in the use of antiseptics are also the most diligent in carrying out all the details of elementary cleanliness. "The only way to avoid the present terrible mortality, and to avoid also the terrible amount of puerperal disease, which, because it is not fatal, is apt to remain unrecorded, is for every practitioner in midwifery to recognize his personal responsibility in the matter."

To state the matter briefly, the high death-rate from puerperal fever in England is due to two causes—the large number of confinements attended by ignorant and untrained midwives, and the laxity in the use of antiseptic precautions in private practice. The remedy for the first evil is to insist upon some better training of the midwives, at least requiring them to possess such an elemental knowledge of the subject as shall enable them to know how to prevent septic infection. The remedy for the second evil is thoroughness in instruction, and in practice.

A Case of Puerperal Septicæmia Treated by Antistreptococcus Serum.

WALTER EDMONDS, of London (*Amer. Jour. Med. Sci.*, April, 1897), reports a case of a primipara, aged twenty-eight years, who was admitted to the hospital on April 15, 1896, with the history of an instrumental delivery on February 2, 1896. A week from that date a rigor occurred, followed by others until her admission to the hospital. The rigors were accompanied by fever, and pains, first in one joint then in another. The treatment had consisted of curetting the uterus a few days after delivery, antiseptic douches, and the administration of quinine and other drugs.

On admission the temperature was 103.6° , heavy respirations. There was swelling of the whole left leg, and the ankle-joint was tender and painful on movement. The treatment for eight days consisted of a daily subcutaneous injection of 4 c. c. of a streptococcus antitoxin. There was marked improvement, and the injections were stopped on account of the swelling, redness and local pain caused by them. But on the third day, without the antitoxin the left knee became swollen and painful. The injections of antitoxin were resumed, but for three days there were slight rigors. After six days the injections were again stopped; the temperature continuing low for four days, when it rose again, and the patient seemed so much worse that on the seventh day an injection of 20 c. c. of antitoxin, obtained from another source, was given. This was followed by a fall of temperature to normal. No more antitoxin was used. On May 19th a small, subcutaneous abscess in connection with the left ankle-joint was opened without an anæsthetic, and healed in a few days. Patient did well, with nearly normal temperature, until May 30th, when there was evidence of pus in the left knee-joint. Two incisions were made under an anæsthetic, and a drainage-tube inserted. Under the microscope the pus showed typical strings of streptococci, though no growth of micro-organisms occurred in a gelatin-tube. The wounds healed after the drainage-tube was removed, and the patient improved until August 17th, when the temperature rose to 102.4° , with chilly sensations. The next day an injection of 10 c. c. of antitoxin from a third source was given, followed by a fall of the temperature to normal. In November the patient was practically well, but with a stiff knee-joint, and much limitation of motion in the left ankle-joint, and also in the movements of the lower jaw. This

case gives a fair opportunity to judge of the effect of the antitoxin, as the marked improvement had commenced long before any surgical treatment, and was plainly due to the antitoxin. That it was a case of streptococcus infection was shown by the pus from the knee. The failure of the streptococci in the pus to grow may have been due to other causes than their having been killed or inhibited by the antitoxin, but it is quite possible that this was the true cause. The injections produced, in a varying degree, pain, erythema, and, on four occasions, an abscess. Some change may have taken place in the serum after the bottle was opened, although much care was taken. Single-dose bottles are preferable. In one instance the antitoxin was tested before use, and found to be sterile, yet its use was followed by an abscess. It must be remembered that in some of these cases large abscesses form spontaneously, as was the case in the knee and ankle of this patient.

IRELAND.

A Case of Incomplete Abortion.

HENRY JELLETT, before the Obstetrical Section of the Royal Academy of Medicine, in Ireland (*The Dublin Journal of Medical Sciences*, May, 1897), reported a case of incomplete abortion, attended with alarming hæmorrhage. A woman, aged thirty-seven years, early in her twelfth pregnancy was attended at her home by a student of the Rotunda Hospital who, on arrival, finding her bleeding profusely, tamponed the vagina, and transferred her to the hospital. The writer saw her immediately upon her admission, and found her in good condition; pulse, 80, full and strong; temperature, 99° F. Her face was rather pale, but this was natural to her. There being no indications of serious loss of blood, doubting the aseptic condition of the vaginal tampon, he removed it, and made a bimanual examination, after an antiseptic douche had been given. There was no bleeding, and no blood on the tampon removed. The uterus was retroverted, and about the size of a three-months pregnancy. The cervix was of normal length, the external os admitted the tip of the index finger, the internal os was apparently closed; there was no clot or portion of ovum in the cervical canal. The uterus was replaced to its normal position with ease, and the

woman returned to her bed. As this case was considered either one of *complete* abortion or of *threatened* abortion, no information could be obtained as to what had been expelled, if any. It was considered unjustifiable to explore the interior of the uterus in the face of the possibility of a threatened abortion only. One hour after the woman had been placed in bed the writer was called hurriedly, as the patient had been seized with a profuse hæmorrhage very suddenly. She was found pulseless, and the bed a pool of blood. She was at once placed across the bed, douched, and the uterus explored rapidly with a Rheinstadter's flushing curette. A piece of placenta about one and a half inches square was removed, with some difficulty. As there was still some hæmorrhage, and fearful of the loss of any more blood, he packed the uterus with iodoform gauze. The whole time occupied was not more than ten minutes, yet during this time he had reason to fear that the life of the patient was extinct. Stimulation was kept up hypodermically all the time and afterward. The foot of the bed was raised after the packing of the uterus. She rallied from the collapse quickly, the intra-uterine gauze was removed the next day, and the patient left the hospital on the sixth, against advice.

Remarks.—There is little doubt but that this woman would have died but for immediate aid, such as is obtainable in a hospital only. Also, there is little doubt but this serious hæmorrhage would have been prevented had the cervix been dilated and the uterus explored at the time of the examination, for the placental tissue would have been found and removed. Are we then to explore every uterus in which a pregnant woman has had a hæmorrhage? Many women have hæmorrhages during the early months of pregnancy who are subsequently delivered at full term, and many women deliver themselves of complete abortions without there being the slightest necessity for subsequent exploration of the uterus. If one in the former class explore every uterus, we shall cause unnecessary abortions, and in the latter class we shall expose our patients to considerable risk of sepsis without compensatory gain. On the other hand, we would benefit or even save the lives of such cases as the one reported.

1. If the patient has lost so much blood that we fear the results of further loss.

2. If a known portion of the ovum has been expelled, and the remainder is retained *in utero*.

3. If the ovum be manifestly dead, but not expelled.

With these indications our line of action is clear. In their absence we are to adopt the expectant treatment.

The importance of a correct diagnosis, whether the case in hand be one of threatened, complete, or incomplete abortion, will be determined:

1. By the nature of the matter which has been expelled from the uterus. This can only be done by examining *all* that has been expelled.

2. The total cessation or the continuance of the hæmorrhage. If the hæmorrhage continue, we may be sure that the uterus is not empty, while, on the other hand, its cessation is by no means an absolute proof to the contrary.

3. The shape of the cervix. This is altered accordingly as the internal or external os is contracted or dilated. In threatened abortion, the internal os is usually dilated more than the external, shown by the widening of the cervix at the cervico-vaginal junction. When the ovum has been expelled the opposite condition is found, *i. e.*: the external os is more dilated than the internal. This is also a negative sign; as in some cases, when a portion of the ovum has been expelled, the internal os contracts after its expulsion. Applying the foregoing methods of diagnosis to the case reported, we find, first, that the most reliable guide was impracticable, as the matter expelled was unobtainable and unknown. The last two guides to be relied upon both indicated that the uterus was empty, inasmuch as the hæmorrhage had entirely ceased, and the internal os was less dilated than the external. The indication was, therefore, the expectant treatment. Yet the result was disastrous and nearly fatal. The writer is forced to one of two conclusions: Either it is necessary to explore the uterus in every case of hæmorrhage from the uterus in the early months of pregnancy; or, this case is to be regarded as one entirely exceptional, and from which no general principle can be deduced. The writer is distinctly opposed to the general adoption of the first conclusion.

(T. W. CLEVELAND, New York.)

PÆDIATRICS.

UNITED STATES.

Infant Feeding: The Anti-dyscrasic Action of Cow's Milk.

M. F. CUPP (*Ann. of Gyn. and Pæd.*, Nov., 1896), while admitting that the milk of an absolutely healthy mother is best fitted for the nourishment of a child, contends that very few such mothers exist, and that with all others, it is better to resort to artificial feeding; in fact, we should be quite as careful in deciding on the mother's capability for nursing as upon that of a wet-nurse. There are very few mothers that are not tainted by disease, or anæmic, or weak, or nervous; the whole race is physically degenerate, owing to its too rapid mental development; and even this mental gain must be lost and mind finally degenerate with body if the body deteriorates much further. Now, if a child, thus poorly equipped by heredity, and naturally depressed at finding himself in a world such as the author depicts, be permitted to nurse his degenerate mother, he will become a weaker being even than she. Clearly we are in a bad way, and the author's distress is not unnatural. Where, then, are we to turn in our trouble? To the cow. From her—an animal of undiminished natural vigor, neither physically nor morally degenerate, an unemotional animal, moreover, with no tendency to hysteria, or other nervous disturbances—from her must we get that kind of milk that will restore our infants to the physical plane from which we, ourselves, unhappy ones, have so long since fallen. Of course, in using this artificial food a certain degree of intelligence is required; it should be properly mixed and sterilized; the child should take it slowly, and at proper intervals; to a neglect of such precautions are due many of the bad results attributed to artificial feeding. The author has observed several families in which the first children, breast-fed by mothers unfit for nursing, were dismal failures, hardly worth bringing up, and in which later children, put directly on the bottle, were healthy and vigorous; and thinks that many children have grown up healthy, in spite of bad heredity, from being wisely fed instead of being nursed by a sickly mother.

The Constitutional Effects of the Improper Feeding of Infants, as Exemplified by Infantile Scorbutus.

J. W. DUDLEY (*Northwestern Lancet*, March 1, 1897) condemns all the proprietary infant foods, each one of which is claimed by its manufacturers to be the only food suitable for a child except mother's milk. Conditions may arise that give these foods a temporary value, and no doubt many healthy children have been brought up throughout upon them; nevertheless, their use is unscientific and inexact, and, as a regular artificial food, modified cow's milk is the only thing suitable. Various methods of modification, usually simple, are employed, all of which depend on dilution to reduce the quantity of albuminoids, followed by the addition of cream and milk sugar, the whole being then slightly alkalized. Should the mixture not agree, we should not condemn the principle; it is the proportion in which the milk is mixed, and not the milk itself that is at fault; we must change the proportions, until we find, as we shall if we persist, those that agree.

The greatest objection to proprietary foods, however, is that, toward the end of the first year, the children begin to show signs of malnutrition, although they seem up to that time to have been doing well; the most common affection is rickets. We wish to speak here, however, of a condition induced by these foods which occurs suddenly, and among the children of the well-to-do; in Germany this was at first called acute rickets, and later in England was recognized as scurvy. As soon as the attention of the profession in this country was called to the disease, many cases were noted, over 100 being reported to the New York Academy of Medicine in three years; probably in addition many cases have been unreported, and many unrecognized. As we see the disease in infants, the main features are pain and tenderness of the limbs, spongy or bleeding gums around erupted teeth, pallor, and later pyriform swelling of the long bones, especially the femur, from subperiosteal hæmorrhage, proptosis, and sometimes hæmorrhages into the skin, and from the mucous membranes. The disease rarely develops in children under eight months old, and rapid recovery follows a change to a more varied diet or to one of raw milk; probably it is due to these facts that fully-developed cases are as infrequent as they are, the change in diet being made before such development. There appears to be

some predisposing cause, sometimes rickets, syphilis or tuberculosis, sometimes indeterminate. Infantile scurvy may be mistaken for fracture of the femur, infantile paralysis, sarcoma of the femur, sarcoma of the eyeball, sarcoma of the gums, otitis, rickets, purpura, and, particularly, acute rheumatism. The prognosis is fatal unless the diet be changed; and the best antiscorbutic diet is cow's milk, modified to meet the digestive requirements of the particular case, but not sterilized.

We must recognize that artificial feeding is on the increase, to a certain extent of necessity; also the consumption of proprietary foods is increasing. Infantile scurvy itself is becoming more frequent, and in almost all the reported cases the use of these foods or of condensed milk is noted; even mixing these foods with cow's milk does not prevent the disease. But no cases have been found in the literature of scurvy occurring in children fed on properly-modified cow's milk, raw or pasteurized; and this we may regard as an absolutely non-scorbutic food. As to whether sterilized milk can cause scurvy, there is a difference of opinion, but it seems probable that it may, but rarely does; pasteurization, therefore, is the better process, as that kills the germs of all ordinary diseases without destroying the antiscorbutic property of the milk.

The Modification of Cow's Milk for Infant Food.

R. M. SMITH (*Denver Med. Times*, April, 1897) says that when we can not nourish an infant on mother's milk we should use the food most closely resembling it; *i. e.*, the milk of some other animal; naturally, we use that of the cow. The milk of some of the other domestic animals resembles human milk more closely than does cow's milk, but not closely enough to obviate modification; so that we need not consider these other milks, one modification being as simple as another. Comparing human milk and cow's milk, we find that the quantity of fat is about the same in each, and since these fats form glycerides with the same fatty acids, they may be regarded as of the same composition. The production of animal heat depends more on the fats than on any other ingredient of the diet; moreover, a lessening of the fats results in malnutrition and impaired digestion, with a tendency to constipation, while an increase causes the same results, with a tendency to diarrhœa. The

fat, however, varies in amount in different milks more than any other constituent. Sugar is deficient in cow's milk, being only $4\frac{1}{2}$ per cent., instead of 7 per cent., as in human milk; we must supply this deficiency with lactose, inferring that this is the only proper carbohydrate to use, as it is the only one found in any milk. We should not use the vegetable sugars, because these rapidly undergo fermentation. It is true that milk sugar undergoes lactic acid fermentation more readily than cane sugar; but it is claimed by Escherich that lactic acid is the chief source of the acidity of the gastric juice necessary to the digestion of proteids, and that milk sugar is normally acted on by the *bacillus lactis ærogenes* to produce an organic acid which drives out the more noxious forms of bacteria. We must not attempt to supply carbohydrates by starches, as in adults, for an infant's digestive juices contain almost no diastatic ferment; and the use of diastase to enable infants to digest starches results in the formation, not of lactose, but of the other sugars that are prone to fermentation. The quantity of proteids in human milk is about one-third that in cow's milk. These proteids are casein and lactalbumen. The casein is held in solution by its combination with alkali-albumenates in the presence of calcium phosphate. The casein of cow's milk is precipitated by more dilute acid than is that of human milk, and is thrown down in the form of clots, while that of human milk is precipitated as fine flakes. The lactalbumen remains in solution in the whey. Moreover, the proportion between the casein and lactalbumen is different, being four to one in cow's milk, and one to two in human milk. These facts explain why infants can not properly digest undiluted cow's milk. There is more inorganic matter in cow's milk, chiefly calcium phosphate, necessary to keep in solution the greater quantity of casein; it therefore, seems hardly wise to use lime water for dilution, though we may use enough (one-sixteenth) to give the milk an alkaline reaction. The attempt to use peptonized cow's milk as a regular diet is to be condemned, as the proportion of its ingredients are wrong, and, as there is no reason why the stomach of an infant should not perform for itself digestion of a proper quantity of proteids; and the unsuitability of most patent foods is at once evident from the fact that they contain starch.

Cow's milk, then, to contain the proper amount of proteid, must be diluted with twice as much water; but this leaves it with only one-

third enough fat and one-sixth enough sugar. To supply the deficiency of fat we must add cream, but we must remember that the cream also contains proteids and sugar in about the same proportion as the whole milk. To make a correct modification it is necessary to know the percentage of fat and proteids both in the cream and in the whole milk; these vary from day to day, not only on account of variation in the composition of the original milk, but also from variation in the separated cream, which may show from 16 to 50 per cent. of butter fat; therefore, a chemical analysis of every lot of milk and cream must be made. The percentage of sugar is pretty constant.

The following example is quoted to show the calculations required in modification:

"The chemical analysis showed that a given sample of cream and skim milk possessed the following percentage composition:

	Fat.	Sugar.	Proteids.	Salts.
Cream.....	28.00	3.00	3.00	0.7
Skim milk.....	.04	4.50	4.00	0.7

"Therefore, if it is desired to obtain one quart of milk so modified as to have the following composition: Fat, 3.50 per cent.; sugar, 7 per cent.; proteids, 1.50 per cent.; salts, 0.3 per cent.; one quart of milk must contain fat, 8.96 drachms; sugar, 17.92 drachms; proteids, 3.84 drachms; salts, 0.5 drachms.

"If the cream contains 28 per cent. fat, four ounces of cream will contain

	Fat.	Sugar.	Proteids.	Salts.
Am't req'd correct prop'n...	8.96	.96	.96	.224 drms.
	<u> </u>	<u>16.96</u>	<u>2.88</u>	<u>.276 drms.</u>
	8.96	17.92	3.84	.5 drms.

"If the skim milk contains 3 per cent proteids, 9 oz. of skim will contain

	Fat.	Sugar.	Proteids.	Salts.
4 ounces cream.....	0	3.24	2.88	.5
	<u>8.96</u>	<u>.96</u>	<u>.96</u>	<u>.224</u>
	8.96	4.20	3.84	.72

"Consequently, all the required amounts have now been obtained, with the exception of the sugar, of which 13.7 drachms are still

needed; this may be obtained by the addition of 8 ounces 6 drachms of a 20-per-cent. milk-sugar solution.

"Thus, to obtain one quart of milk which has been so modified as to correspond with the composition of human milk given above, provided chemical analysis shows the percentage composition of the cream and skim to be as given above, there will be required: cream, 4 ounces; skim, 9 ounces; sugar solution, 8 ounces 6 drachms; lime water, 2 ounces; distilled water, 8 ounces 2 drachms."

Such a process gives a very accurately humanized milk, the amount of each ingredient coinciding within one-tenth of one per cent. of that required; moreover, the emulsion of the fat is perfectly preserved—an important point. Although handled with all care in the preparation, the milk is finally pasteurized, hermetically sealed and packed in ice. Of course, such a food is rather expensive; still a child can be fed on it at the rate of about twenty-five cents a day; and there can be no more ill-advised economy than cheap infant food, the results of such feeding extending far beyond the period of infancy.

The Use of Opium in the Diarrhæal Diseases of Children.

F. M. CRANDALL (*Archiv. of Ped.*, May, 1897) says that opium is contra-indicated in children: (1) In the early stages of an acute diarrhœa, before the intestinal canal is clean; (2) when the passages are infrequent and of a bad odor; (3) with a high temperature or cerebral symptoms; (4) when its use is followed by increase of temperature or by more offensive passages. Opium is indicated: (1) When the passages are frequent and painful, or (2) large and watery; (3) in dysenteric diarrhœa, with castor oil or a saline; (4) in late stages when the passages are small, frequent, and nagging; (5) when much food passes undigested, the bowels acting as soon as food is taken.

Many times diarrhœa is a conservative process, and opium serves but to prevent the elimination of toxic materials from the intestine. When indicated, the dose should be only sufficient to relieve pain and check peristalsis; it should be prescribed separately in order that it may be given only as often as necessary; the effect of one dose partially subsiding before another is administered, this rarely occurring in less than four hours.

Medical Inspection of Schools.

F. M. CRANDALL (*Archiv. of Ped.*, May, 1897) says the daily medical inspection of the public schools in New York City, begun March 29th of this year, amply proved on the first day the wisdom of the measure. On that day 140 children were excluded from the schools: there were 14 cases of diphtheria, 8 of chicken-pox, 3 of measles, 3 of mumps, 1 of scarlet fever, 1 of croup, 35 of contagious eye diseases, 8 of skin diseases, 35 of parasitic diseases of the head, and 12 of parasitic diseases of the body. Besides limiting the spread of contagious diseases and reducing the death rate, this exclusion from school will teach parents the infectiousness of certain eye and skin diseases, of the desquamative stages of contagious diseases, and of many apparently mild sore throats; and will also show them the necessity of keeping such cases apart from other children.

Pains in the Stomach in Children: Their Significance.

R. C. ROSENBERGER (*Med. Council*, February, 1897) criticizes the readiness with which parents and physicians jump at a diagnosis of gastro-intestinal catarrh in children that seem to suffer from pains in the stomach. Many times investigation will reveal that the child has frequent and painful urination, and that the urine deposits, on standing, a white or brick-dust sediment; while microscopic examination will show the characteristic elements of an acute or sub-acute cystitis. The disease in children may be caused by exposure to cold or wet, or by co-incident gastro-intestinal catarrh; in one case it was due to a suppression of the desire to urinate. If the urine is acid give alkaline mixtures; if alkaline, acids, and of these benzoic acid is very useful. For the pain belladonna is good, and, this failing, cannabis indica. Much milk, or milk and vichy should be drunk. Cantharides may be of value. When the patient is much run down tonics are indicated. The author mentions the case of a boy, ten years old, that had been suffering for four days with pain in the epigastric region and left chest; when stripped, however, and asked to point to the seat of the pain, he held his hand over the bladder. The organ was found distended, and it was learned that the boy had been urinating but once daily, and that with much pain; but the stream did not stop suddenly, as with stone.

Rest in bed, between blankets; diaphoretics, an alkaline mixture, and plenty of milk, brought about a rapid recovery.

The Radical Cure of Hernia by Implanting a Section of Sterilized Sponge.

W. B. PLATT (*Johns Hopkins Hosp. Bul.*, March, 1897), in an attempt to avoid the disadvantages of transplanting the cord in herniæ, has done four operations, as follows: An incision two and a half inches long is made over the inguinal canal, extending a half inch on the scrotum, and the canal is laid open; the entire length of the sac is then opened, and the hernia reduced; if the hernia is acquired the sac is ligated as high as possible, cut square off, and dropped beneath the ring; if congenital, the sac is cut away close to the internal ring, but it is often necessary to leave the inferior layer adherent to the cord. A piece of fine surgical sponge, one and one-half inches in diameter and one-eighth of an inch in thickness, is then sterilized in the usual manner, and washed in normal saline solution. A radial cut is made in the sponge. The constituents of the cord are gathered together as high as possible, and placed in the center of the sponge and at right angles to it; the edges of the cut are slightly overlapped, and the sponge bound by two sutures to the cord and spread out beneath the internal ring. The conjoined tendon is then bound by quilted sutures to Poupart's ligament, the inguinal canal sewed with silk, and the skin sutured with silk-worm gut. Drainage from the upper angle of the wound is necessary for twenty-four hours. The patient is confined to bed on his back for three weeks.

Four cases were reported, all in children. In two the cure has been thus far perfect, but it is too soon to say whether it will be permanent. In the other two cases it was necessary to remove the deep silk-worm gut sutures to close a little sinus in the upper edge of the wound; the sinuses healed readily, but the herniæ returned; in one of them, the first operated on by this method, and in which the sponge had been simply laid beneath the ring, a secondary operation was done five months later, with the intention of inserting a second piece of sponge; but an opening of less than a quarter of an inch was found in the location of the external ring; two sutures were inserted, and the wound closed promptly.

In none of the cases was there any trouble or irritation from the sponge; where the hernia returned, it was due to the early removal of the sutures. If sponge will heal thus in a wound, it may be possible to use silk or other animal tissue in the same way; and, by filling in some such way the funnel opening left after the ordinary Banks operation, we may be able to avoid transplanting the cord. No support was worn by any of these patients after getting out of bed. What happens to the sponge we do not know; probably it becomes incorporated into the tissues by the aid of leucocytes and blood vessels that enter its meshes; these later atrophy, leaving scar connective tissue.

Broncho-Pneumonia of Children.

C. M. CARLAW (*Northwestern Lancet*, April 15, 1897,) says of the causation of broncho-pneumonia that it does not usually follow a simple bronchitis, but is very often a sequel to that of the infectious diseases, particularly measles, being more often associated with this disease than with any other. Whether the poison of the infectious disease actually causes the pneumonia or merely renders the system more susceptible to it we do not know. Regarding the pathology of broncho-pneumonia, Delafield's theory is generally accepted: that it is an infectious disease, characterized by a productive inflammation and infiltration of cells in the walls of the bronchi and in the peri-bronchial tissue, and by the growth of pathogenic germs; the disease spreading not merely to the lobules of the affected bronchi but as well to the surrounding alveoli or lobules. We find the bronchus and air cells filled with exudate, less dense toward the periphery of the pneumonic focus; these foci may remain disseminated or run together, producing the pseudo-lobar form of the disease. We do not have distinct stages of consolidation and of resolution as in lobar pneumonia because different portions of the lungs are successively invaded and successively clear up; and resolution is always slow from the largely cellular character of the products of the inflammation. A number of different micro-organisms are found, the streptococcus pyogenes being the most frequent and probably the most potent. The tubercle bacillus is of course often found, and may mean either that the disease was tuberculous from its inception or that tuberculosis was engrafted upon the original process.

The course of broncho-pneumonia may be acute, subacute or chronic, the acute form being most frequent and usually following measles. In young infants, Delafield says, the only symptoms are fever, prostration, and rapid breathing. The symptoms of the disease in older children are familiar. Subacute broncho-pneumonia most frequently follows whooping cough; there are generally loss of flesh, profuse sweats and exhaustion. Broncho-pneumonia may be chronic from the start or the acute form may become chronic; in the latter case the physical signs persist, and after a time the fever, which may have disappeared, recurs; and the cases die from exhaustion, or terminate in acute miliary tuberculosis, or recover with damaged lungs. We must also remember that broncho-pneumonia is often attended with cerebral symptoms, sometimes so marked as to almost exactly simulate a cerebro-spinal or tuberculous meningitis and to completely mask the lung affection.

The physical signs are often uncertain; before any can be detected, death may take place. On general inspection we note chiefly the flushed or livid face, the dilatation of the *alæ nasi*, the child's passive, often semi-comatose, condition, and later, perhaps, cyanosis and coma. Inspection of the chest will show the frequent and shallow breathing, the action of the accessory muscles, the elevation of the upper part of the chest and recession of the lower. Percussion may give some dullness and sense of resistance, usually in the neighborhood of the roots of the lungs behind on both sides. Auscultation reveals all sorts of râles, and diminished breathing over the affected area; later, the breathing becomes broncho-vesicular, and we may get exaggerated vocal resonance; bronchial breathing and bronchophony are very rare except in the pseudo-lobar form.

The duration of the disease is from seven or more days in the acute form to many months in the chronic cases. Even in the acute forms the physical signs persist for some time after the subsidence of the temperature. In acute fatal cases death generally takes place between the third and eighth days, most often with an increase of the coma and cyanosis, feeble pulse, a very high temperature and filling of the bronchial tubes. It may occur suddenly with a fit of coughing or a convulsion. Death may also result from pulmonary collapse with increasing dyspnoea and a fall of temperature. In the subacute and chronic forms death results from exhaustion or tuberculosis.

It is not always easy to diagnose broncho-pneumonia from a simple bronchitis; but if, in a child convalescing from measles or whooping cough, we find a rise of fever with cough, rapid breathing and pulse, and fine râles in the lungs, we may usually diagnose broncho-pneumonia. It is only the pseudo-lobar form that we are likely to confound with lobar pneumonia; in favor of broncho-pneumonia would be a subject under five years of age, preceding measles, or whooping cough or ill-health, bilateral signs, insidious onset, long duration and slow recovery; also, chlorides, absent from the urine in lobar pneumonia, are found in broncho-pneumonia. Pleurisy causes more pain and less depression than pneumonia; is generally unilateral and gives its characteristic friction sound; if effusion follows we get the signs of fluid, and in case of doubt may use the needle. Acquired pulmonary collapse we distinguish by the suddenness of the dyspnoea, deficient oxygenation and prostration; moreover the physical signs are shifting, and there is no fever. We should suspect that the disease was tuberculous if located in the apices, if the patient be of the colored race, if emaciation be rapid and sweating profuse; an examination of the sputum may confirm the diagnosis. In broncho-pneumonia that simulates meningitis we do not have the scaphoid abdomen, the obstinate constipation, nor the "tâche spinale" of the latter disease.

As complications, we may have pleurisy, generally plastic, rarely with effusion, catarrhal laryngitis, gastric and intestinal catarrh, convulsions and pulmonary collapse.

The most important sequela is enlargement of the bronchial glands due to the irritation of the material that the lymphatic ducts bring to them from the lungs; if large enough to give symptoms, we get a peculiar, dry, loud, ringing cough, which may be even brassy in character if the recurrent laryngeal nerve be pressed upon. Moreover, broncho-pneumonia generally leaves its subject in a very anæmic and debilitated condition, and very susceptible to morbid influences, particularly tuberculosis.

The prognosis depends upon the age of the child, being almost hopeless when that is less than six months; upon the preceding disease, being most hopeful when the pneumonia follows measles, less so after diphtheria, and least so after whooping cough; acute forms are less dangerous than chronic ones; the proportion of lung involved is to be considered; previously feeble children, of course,

and very fat children bear the disease less well; restlessness giving place to stupor is a bad symptom, and late convulsions are nearly always fatal.

Prophylaxis includes the prevention of bronchial catarrh in well children by sensible hygiene; and the proper care of such a catarrh when it does occur. Particularly important is it that cases of measles should have plenty of pure air; the combination of measles and foul air is the most prolific cause of broncho-pneumonia.

There is no specific treatment. Good hygiene, good nursing and the patient's comfort are of the most importance; there should be plenty of sunlight and of fresh air, and the air should be kept moist with steam. Milk and lime-water, albumen-water and beef peptonoids may be given as food; they may be taken cold and cold water may be drunk freely. Whisky should be given from the first in severe cases. A pneumonia jacket should be worn; we may use oil of turpentine in liniment locally, and if the pain be considerable a hot flaxseed poultice. Little medicine is needed; when the cough is dry we may use an alkaline cough mixture with syrup of ipecac; when loose, the ammonium salts, perhaps preferably the carbonate so long as acute symptoms are present; later we may substitute the chloride. If the pain is not relieved by the poultices we may use compound tincture of camphor or Dover's powder, but should be cautious about giving opiates. In dyspnœa due to filling of the tubes we may give an emetic; ipecac is most used; paroxysmal dyspnœa not due to obstruction may usually be relieved by a ten- or fifteen-minute hot bath. Antipyretics are not to be recommended; should the fever require treatment, which is rare, the best measure is a bath at 100°F. cooled to 80° F.; this moreover acts as an excellent general tonic. Collapse requires hypodermic stimulation; often a cold douche to the nape of the neck will start up inspiration very vigorously; mouth-to-mouth inflation may be tried; wrapping the child in a sheet wrung out of mustard water or out of ice-cold water with blankets outside is often useful once the breathing is improved. In cerebral cases we rely upon the hot bath and sedatives. Convalescence requires careful feeding, the judicious use of tonics, and caution against exposure to cold and damp. Change of air is to be recommended.

AUSTRALASIA.

Peculiar Nasal Polypus in a Child Aged Seven Years.

J. L. GIBSON (*Australasian Med. Gaz.*, Dec. 21, 1896) reports the following case in a child seven years old, who gave a history of difficult and noisy breathing, and of slight deafness. On examination, he was found to breathe through the right nostril only, and that imperfectly; some adenoids could be felt in the naso-pharynx posteriorly, and in front a mass whose greatest bulk was in the left nostril, but which blocked both posterior nasal orifices, so that the septum could not be made out; anterior rhinoscopy revealed a polypus at the back of the left nostril; posterior rhinoscopy showed the adenoids, and a firm, red polypus of the size of a marble projecting across the septum, from the left nostril and hiding also the right one. A snare was placed around the polypus, but ordinary traction failed to dislodge it; the tumor was then seized far back in the mouth, and considerable force applied, more than was apparently needed for breaking the pedicle, when the polypus came out somewhat like a cork from a bottle. The growth was two and a quarter inches in length, and appeared to have sprung from the external wall of the posterior left nostril, under cover of the middle turbinated body; one-half had then grown forward into the left nostril, completely blocking it, while the other half had grown into the naso-pharynx across the septum, and partially blocked the right nostril. After removal breathing was perfectly free. The author recalls two cases of his own of nasal polypi in adults growing from the back of the nose, and projecting into the naso-pharynx; but polypi of any sort are rarely found under the age of fifteen years.

CANADA.

Notes upon the Estimation of the Number of Bacteria in Milk.

MAUD J. FRYE (*Canadian Jour. of Med. and Surg.*, Feb., 1897) has adopted the following method for counting bacteria in milk: Five c. c. of the milk to be examined are thoroughly shaken with 50 c. c. of sterilized water; of this, 1 c. c., containing .01 c. c. of milk, is mixed with sterile nutrient gelatine or agar, and the mixture

poured over a Petri plate. At the end of forty-eight hours in summer, and of seventy-two hours in winter the colonies are counted, the dish being placed over a glass plate painted black and ruled in square centimeters. Control plates of the water and of the medium are made. In summer, and with any but the best milk, a second dilution is required.

It appears that the enormous numbers of bacteria found in milk depend not so much on the original contamination as on the length of time and the conditions under which the milk has been kept. Various milks were examined in the above manner: the number of colonies varied from seven at the end of five days, in sterilized milk, to 369 at the end of three days, in grocery milk. So-called certified milk, from a dairy outside Buffalo, in which every precaution is taken regarding the health of the animals and absolute cleanliness, showed a variation in seven examinations of from 4400 to 132,720 bacteria to the cubic centimeter; while the milk used at the Fitch *Creche*, which is sterilized with all care, presented in six different examinations from 8400 to 1,002,400 bacteria to the cubic centimeter. Cultures of milk as delivered to the consumer, and of grocery milk, usually showed much greater numbers. The liquefying organisms, particularly the hay bacillus and the potato bacillus, were present in small number, if at all, in the certified milk. Of course, all comparative estimates must be made under the same conditions; and the counts can have only a relative value, as none can be more than approximately correct.

IRELAND.

Clinical Pictures of Children's Diseases: Friedrich's Disease.

LANGFORD SYMES (*Dublin Jour. of Med. Sci.*, Feb. 1897) says that of the cause of this disease we know nothing; it has a tendency to affect several children of the same family, and often occurs after the infectious diseases, though these seem but to hasten its appearance. We can attribute it only to the congenitally brief life of the particular nerve element involved. It is a variety of lateral sclerosis, and affects the lateral and posterior columns of the cord; post-mortems show the cord reduced to three-fourths its normal size, sclerosis of the posterior columns and of the direct cerebellar tract, and the nerve cells of the gray matter fewer in number and

atrophied. Perhaps the six chief symptoms are ataxia, loss of knee jerks, nystagmus or erroneous projection, tremor and unsteadiness of the head, neck, and arms, lateral curvature of the spine, and imperfect speech. These symptoms, with clear mind, perfect senses, normal sensation, *pes cavus*, head bent forward, weakness of certain muscles, choreiform movements or vertigo, complete the picture. We do not usually have anæsthesia, analgesia, optic neuritis, Argyll-Robertson pupil, trophic changes, pains, or crises, nor affection of the sphincters.

The following case is described: E. C., male, nine and a half years old, of good family and personal history, and brought up amid hygienic surroundings, gave a history of suffering from staggering and trembling since an attack of German measles four years ago; for eighteen months his sight had been affected. Examination showed a boy of fair nutrition, but with a peculiar expression, as if he were trying hard to look directly at things; that he could not do, but looked far to his right, the movements of the eyes were jerky, but there was no definite nystagmus; sight was fair, and the pupils reacted to light and to accommodation. Standing with open eyes, he was unsteady; with closed eyes, much more so; there was also, on standing, an ataxic movement of the head. His gait was unsteady and staggering; he walked on the inner edge of the foot, his legs having a wide base, with the knees close together; his head bent forward, down and to one or the other side. The motions of the hands were clumsy, and, on extending them, there was some coarse tremor. There were no knee jerks nor ankle clonus. Speech was rather slow. There were *pes cavus* and some lateral curvature of the spine. We diagnose this case from cerebellar tumor by the lack of headache, vomiting, optic neuritis, rigidity, tetanic spasms, retraction, and hydrocephalus; and from locomotor ataxia by the lack of Argyll-Robertson pupil, pains and crises, and by the age of the patient. We must also exclude hysterical ataxia and cerebellar atrophy, but the latter is so extremely rare that we may almost neglect it. The prognosis of Friedrich's ataxia is bad, as the course of the disease is progressive, and recovery unknown; the child generally becomes unable to walk in from three to five years, but may live for fifteen or twenty years.

A. D. C.

ITEMS OF INTEREST.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLÖGISTS.

The American Association of Obstetricians and Gynæcologists will hold its tenth annual meeting at the Cataract House, Niagara Falls, Tuesday, Wednesday, Thursday, and Friday, August 17, 18, 19, and 20, 1897, under the presidency of Dr. James F. W. Ross, of Toronto. The railways have granted reduced fares, on the certificate plan, to all who attend the meeting; the Cataract House has made a reduction from its regular tariff of charges; the place of meeting is a famous one, the season of the year auspicious, and everything seems to conspire to justify a prediction that this will be a large and interesting meeting of this famous association.

The date of the meeting has been fixed in mid-August, apart from college sessions, during the vacation season, and at a place where many people like to spend a portion of their outing. The climate of Niagara is always desirable during the heated term, the spray from the cataract giving it a healthy moisture and coolness that is at once invigorating and charming. To visit Niagara under the auspices of this association will afford the tourists exceptional opportunities for the enjoyment of a rare and radiant scenery that is the most sublime in the world. One session will be devoted to the exhibition of specimens, and giving their histories.

The scientific work of the association will begin on Tuesday morning at 10 o'clock, and end Friday at 1 o'clock, and it is expected to so arrange the program as to afford the members opportunity to visit the places of interest each day on the adjournment of the afternoon session. It is expected that the inducements to attend this meeting are such that Fellows will not only come themselves, but bring their families, and invite their friends as well to visit the wondrous cataract.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The next meeting of the Mississippi Valley Medical Association will be held in Louisville on October 5, 6, 7, and 8, 1897. All rail-

roads will offer reduced rates. The President, Dr. Thos. Hunt Stucky, and the Chairman of the Committee of Arrangements, Dr. H. Horace Grant, promise that the meeting will be the most successful in the history of the Association, and this promise is warranted by the well-known hospitality of Louisville and Kentucky doctors. Titles of papers should be sent to the Secretary, Dr. H. W. Loeb, 3559 Olive Street, St. Louis.

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SOME PATHOGNOMONIC PHYSICAL SIGNS OF
CHRONIC GONORRHŒAL INFECTION IN WOMEN,
AND THEIR VALUE IN THE DIAGNOSIS OF
PELVIC DISEASE.*

BY A. PALMER DUDLEY, M.D.

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Of all the forms of disease to which the pelvic organs of women are subject, that which she least suspects becomes the most dangerous and, ere she realizes it, has wrought irreparable damage to her. Originating in sexual intercourse, if communicated by the husband, he seldom if ever acknowledges its character to her, and if contracted out of wedlock, its recognition is usually concealed until its germ has passed beyond control by methods other than surgical. Since Nöggerath first wrote upon the subject, the profession, and especially many of those working in the field of gynæcology, have devoted much time and study to it, both clinically and scientifically, with the hope of being able to check the progress of the disease in women before it has invaded the structures which, when once involved, render them permanent invalids. The result of their work is upon record, and easily accessible to you all; it is, therefore, unnecessary for me to attempt to offer any new theories or methods of relief for cases of acute gonorrhœa, for, in my twenty years of experience, I have seen but very few such cases, and I believe that to be the general experience of most of those present, from the fact, as previously stated, that in the majority of cases, excepting prosti-

* Read before the American Gynæcological Society, May 5, 1897.

tutes, the disease has passed beyond the acute stage and the physician is called to see the sequelæ of it.

Lyons says, in the *Medico-Surgical Bulletin* of May 1, 1895: "Notwithstanding all the facts that have been accumulated in the study of this disease in both sexes in the last few years, it is a most lamentable truth that there is no disease, at least of such common occurrence, that is so little understood, the diagnosis of which is so often missed, is so much neglected, and so improperly and unsatisfactorily treated by the vast majority of the profession." According to his experience he says he must include even gynæcological specialists.

Such has been my experience, and my only object in writing this short paper is to call your attention to what I believe to be positive physical signs of such an infection, be that infection immediate or remote. As I know of no other pathological condition of the generative organs of women that will initiate and perpetuate such, I deem them therefore to be valuable aids in making a correct diagnosis of many forms of pelvic disease.

Given a case of acute gonorrhœa to examine, what do we find? An urethral meatus, vestibule, nymphæ and ducts of the vulvo-vaginal glands in a high state of inflammation, bathed in pus, painful and sensitive to the touch, and the act of urination attended by acute pain. The mucous membrane of the lower half of the meatus is swollen and everted and, early in the progress of the disease, is changed from its normal pink to a deep red; the ducts of the vestibule, from being almost invisible in their normal state, now stand out prominently on the surface of the mucous membrane, and their color is deepened many shades. If we inspect the vulvo-vaginal glands and their ducts, we shall find in the first few days of the disease that they are tender to the touch, increased in size, their normal secretion which is a colorless mucus increased and changed to muco-pus, the mouths of the ducts are pouting and of a deep red color, and the mucous membrane surrounding the ducts for about an eighth of an inch in diameter tinged to the same hue. If a drop of the pus secreted by these glands be placed under the microscope and search made for the gonococcus, it will usually be found in the early stages of the disease.

Although it is claimed by many that the vaginal mucous membrane is not susceptible to the action of the gonococcus, if we exam-

ine it closely we will note that, whereas in a healthy condition the follicles in the vaginal mucous membrane, being sparsely distributed over the vaginal wall, are not readily visible to the naked eye, they can now readily be traced as minute, angry red spots not larger than the head of a pin, which give forth a dirty, grayish-colored secretion. We must also bear in mind the fact that the same infected semen which has inoculated the external genitals has also bathed the cervical portion of the uterus and mingled with its secretions. We all know the susceptibility of the uterine mucous membrane to the action of the gonococcus and its beautifully-arranged rugæ within the cervical portion of the uterus, upon and behind which the germ can secrete itself and do its deadly work unmolested by almost any form of medication.

For this reason I labor under the impression that he who would successfully abort a gonorrhœa of the uterus must be there with his antidote before the septic intercourse takes place. Such is not our privilege. We are called upon to repair the damage, and our efforts are directed toward relieving the distress, and particularly that pertaining to the urethra and bladder, as quickly as possible. Under careful aseptic treatment the acute symptoms subside, the painful micturition is relieved, the swelling and tenderness of the external genitals disappear, and the parts apparently return to their normal condition.

If we watch these patients carefully for some time, we shall see that they never return to the condition they were in before the infection took place. Instead, the pouting meatus urinarius remains, its mucous membrane permanently changed in character, and its appearance changed so as to resemble what has commonly been called urethral caruncle and looked upon by many as prolapse of the urethra. The ducts of the glands of the vestibule remain indefinitely, and in many cases for years, as red and angry spots to mark the former dwelling-place of the gonococcus. But for me, the appearance of the ducts of the vulvo-vaginal glands are the most positive evidence of the former residence of the gonococcus in the locality. I have yet to see the woman who has suffered from gonorrhœal infection whose vulva will present a normal appearance upon examination.

If experience proves that I am right—and the evidence of those who have investigated the subject thoroughly seems to go far toward

proving the truth of my statement—of how much value are these signs to us in our efforts to arrive at a correct diagnosis in the many obscure forms of pelvic disease which we are called upon to treat?

First let us see why it is that the pathological changes which take place in these ducts of the vulvo-vaginal glands and the ducts of the vestibule, as the result of gonorrhœal infection, cause them to permanently stand out as evidence of such. Sängér says: "In many cases of gonorrhœa, the disease has not ceased with the disappearance of the gonococcus, and the inflammatory processes consequent upon the entrance of the gonococcus into the tissues may persist after the gonococcus has disappeared as a chronic inflammatory process that ultimately leads to the formation of scar tissue, and also as an apparently recurring diseased condition in the form of an acute exacerbation of the existing chronic inflammation." To these existing chronic pathological conditions he has applied the term "residual gonorrhœa." Others term it "latent gonorrhœa."

I have not been able as yet to study under the microscope the structural changes in the mucous membrane lining these ducts, but it would seem to me that the peculiar deep red and apparent constantly congested appearance of these ducts is due to a destruction of the proper columnar epithelium by the gonococcus and its replacement by squamous epithelium upon hyperplastic capillary new formation. Certain it is, so far as my experience goes, that a duct once so infected never returns to its normal appearance. To be sure, as in other forms of disease, all cases are not alike. While some present these signs to a marked degree, others will be only slightly changed, dependent, I believe, upon the virulence of the infection and the number and vitality of the gonococci and whether the infection is a pure or a mixed one.

Granted then that a sufficient number of these signs are present to attract our attention to the possibility of gonorrhœal infection, what is the next step toward obtaining a correct diagnosis? If possible, get from the patient a history of the acute attack and the circumstances under which it took place. In very many cases this can not be accomplished owing to domestic reasons. It is our duty then to see the husband, and, if possible, obtain the knowledge we seek through him. If we are not privileged to do this, then the microscope will prove a substantial aid. When once the gonococcus has been discovered on the slide, we are sure of our position. Again,

this is not always possible, for, as Sanger says, in many cases the gonococcus has disappeared from such secretions as we are able to obtain and we have only the results of its invasion to guide us. However, after a little experience in hunting for gonococci and finding it or getting a confession in the major portion of the cases, one will feel very sure of his ground and, in such a case, should treat the case as if it were one of gonorrhœa. If he errs it will be on the safe side.

Now, as the purpose of this paper is only to point out what I consider some pathognomonic signs of gonorrhœal infection and to call attention to their value as an aid in the diagnosis of different forms of pelvic disease, I purpose to keep to my subject and for the rest of the time allowed me will call attention to a few of the pathological conditions within the pelvis where a perfect knowledge of such an infection will be a valuable aid in arriving at a correct diagnosis and instituting proper treatment. For convenience I have arranged them as follows:

1. Various pathological changes within the urethra attended by pain at the neck of the bladder following the act of urination.
2. Abscess of the vulvo-vaginal glands.
3. Chronic senile vaginitis.
4. Pernicious leucorrhœal discharge from the cervix uteri.
5. Dysmenorrhœa from stricture at the internal os.
6. Structural changes in the endometrium resulting in menorrhagia.
7. Pathological changes within the Fallopian tubes.
8. The effect of the gonococcus upon the ovary.
9. The different forms of displacement that accompany this condition.
10. Sterility.

In regard to the first sign, we have been led by some writers upon gynæcology to believe that the major portion of pain and irritation at the neck of the bladder is reflex and due to displacement or peri-uterine inflammation which results in traction upon the base of the bladder through its vesico-uterine ligaments. I suppose this explanation arose from the fact that cystitis and the formation of stone are not so frequently found in the female as in the male, and therefore the physician goes on treating his cases with tampons and applications to cure what he considers to be a reflex condition at

the base of the bladder. But if he is made by experience to realize that gonorrhœal infection can produce stricture and disease of the female urethra just as readily as it does in that of the male, a perfect knowledge of these signs would lead him to direct his attention to the urethra and bladder of the woman to relieve these symptoms. It is my belief that a knowledge of these conditions was largely influential in inducing Dr. Emmet to originate his button-hole operation for relief of such cases.

Urethral carunculæ, one of the most distressing pathological conditions in woman, would be looked for as a legacy of gonorrhœal infection, and the cystoscope should be brought into play for the discovery of changes at the base of the bladder about the ureters—in fact, any pathological change in the urinary tract that could follow in the wake of gonorrhœa should be sought for by the careful and observing physician.

With respect to the second sign, that of abscess of the vulvovaginal gland, could we discover the gonococcus or the diplococcus in the gland contents, we would know that extirpation of the gland rather than simple evacuation of its contents would be the only treatment that would relieve the woman not only from the dangers of repeated attacks of inflammation but from the risk of infecting the opposite sex.

My desire to call attention to the third proposition—chronic senile vaginitis—is due to the fact that in my twenty years' experience I have had many such cases where any form of treatment recommended in modern gynæcological practice seemed only palliative in my hands. I deem this due to the fact that a chronic discharge from the uterus of such origin may often after the menopause be so irritating to the vaginal mucous membrane that those afflicted may be indefinitely subject to acute or subacute attacks of vaginitis, the cause of which is unknown to themselves or the physician. To substantiate my position, I might cite the history of several such cases where treatment antiphlogistic in character had been continued by my *confreres* or myself for a period extending over months, only to be disappointed in the end by the appearance of an acute exacerbation without apparent cause. Experience has taught me that these cases in an aggravated form, although they have long since passed the menopause, can only be cured by the removal of the infected uterus. This may seem to some of you to be

an extreme measure or method of treatment to apply to senile vaginitis, but the cure of the case lies in the removal of the cause, and if the cause be a catarrhal uterine secretion, infectious in character, then why hesitate in its removal? Understand me correctly, I am only advocating such a method of treatment when palliative remedies applied to the vagina have failed.

In what manner will a perfect knowledge of gonorrhœal infection affect our diagnosis respecting the results to be obtained in such cases as come within the fourth proposition—pernicious specific leucorrhœal discharge from the cervix, one of the most frequent causes of sterility in women? Could we from such knowledge be able to discriminate between it and a simple leucorrhœal secretion due to passive congestion of the pelvic structures with simple or complicated displacement, we certainly could give a much more hopeful prognosis in our cases than we could did we know that the secretion which escapes from the cervix uteri was only the outer evidence of a deep-seated infection* that had in all probability permanently injured the uterine appendages.

We should also be able to easily cope with the fifth condition mentioned—dysmenorrhœa from stricture at the internal os. No man with a perfect knowledge of such a condition, and in his right mind, would promise his patient that simple divulsion of the stricture at the internal os and curetting of the uterine mucous membrane would permanently relieve her from pain during the menses or, if she so desire, secure her the hope of her married life—impregnation.

Respecting the sixth proposition,—structural changes in the endometrium resulting in hæmorrhage,—I can only say, that I find on my history books many cases that have come to me for relief from increased and prolonged menstruation in which I have been able to trace the origin of such directly to a specific infection of the uterine mucous membrane. I do not pretend to say that this is the only cause of such a condition; it is only one among many. But if we

* Sinclair says: "When the gonococci have once invaded the glands of the cervix uteri, they appear to linger there as long or longer than they do about the deeper parts of the male urethra. Developing in a new soil, they are endowed with a greater vitality than the comparatively starved stock from which they sprang." He further says: "It is the neglected cases of gonorrhœa in the male—those which become chronic—which most frequently give rise to the infection of the female, even though they may have long ceased to show signs of activity."

are able to recognize it by the external signs of infection which I have pointed out, we should certainly not make the mistake of attributing the hæmorrhage to a laceration of the cervix and close the latter with the expectation that the hæmorrhage would be relieved when we have restored the cervix to its proper form. Nor would we go on indefinitely making applications of remedies to a diseased mucous membrane, when we know that beyond the mucous lining of the uterus exists a focus of infection out of reach of such applications.

As a valid reason for my citing the seventh proposition—pathological changes within the Fallopian tubes resulting from gonorrhœal infection—I make the following quotations:

Bumm says that "purulent parametritis with gonorrhœa of the cervix is due to a mixed infection with pyogenic bacteria. It is the analogue of the acute gonorrhœal bubo in the male, which likewise owes its origin to pyogenic germs. The further the gonorrhœal infection advances from the cervix toward the appendages, the purer becomes the culture of the germ, and it is claimed that when infection invades the Fallopian tube, very few bacteria other than the gonococcus can be found in the secretions of the uterine mucous membrane, and that bacteria other than the gonococci are scarcely ever found in the tube in these cases. The peculiarities and the results of the action of the gonococcus upon the tubal mucous membrane is therefore shown in its natural state."

If Bumm is correct, and he certainly may be looked upon as an authority, we should be wary in our prognosis to those who come to us presenting the external signs of gonorrhœal infection and complaining of peri-uterine trouble. It would certainly not be wise to promise a cure to any such patient by the application of local methods of treatment other than surgical. I can only speak for myself, but I am candid when I say that it has been my fortune to meet with many such cases after they have passed through the hands of physicians who have stimulated them with such promises.

Let us now pass on to the eighth proposition—the effect of the gonococcus upon the ovary. So far as my experience goes, the major results attending such infection are these: Imprisonment of the ovary to the fimbriated extremity of the tube and to the surrounding structures, and changes in the peritonæal covering of the gland. It is a well-known fact that Nature tries to circumscribe any

inflammatory process affecting the Fallopian tube. If it be gonorrhœal or septic infection of its mucous membrane, then she rapidly closes the fimbriated extremity in her effort to bar the progress of the disease and prevent general infection of the peritonæal cavity. In the majority of such cases in which I have made laparotomy, I have found the tube glued to some portion of the ovary and the latter more or less embedded in or covered by organized lymph. For the most part, I believe that the inflammatory processes involve the superficial structures of the ovary, producing changes in its capsule which not only bar the organ from future usefulness as a reproductive organ but induce a process of cystic degeneration of the ovisac which finally results in permanent destruction of the ovary either by cystic degeneration, senile atrophy, or a suppurative process. Certainly in such a case the intelligent practitioner would not recommend prolonged treatment by vaginal application and promise a cure.

My ninth proposition,—the different forms of displacement that accompany this condition,—is one upon which the brightest minds in our profession have labored for years, and many operations have been devised for the relief of such displacements. Such operations are, as a rule, only applicable to individual cases, and then only when we are certain that our diagnosis will justify the application. This subject is so vast that I shall only sum it up in these words—that he who stops short of making a laparotomy for the relief of such a condition is only temporizing with his case and letting slip from his grasp the golden opportunity of restoring his patient to health by the most modern and intelligent means of treatment known at the present day.

I will tax your patience only a moment longer with one more condition in which I am deeply interested, and which, in my judgment, calls for the greatest skill on the part of the surgeon and the most patience and resignation on the part of the patient, and this is sterility as a result of gonorrhœal infection, because it includes among its causes all of the conditions I have previously mentioned, together with that of the opposite sex, and, in many cases, the domestic happiness of a household. Sinclair says that a woman once infected with gonorrhœa is forever after a sterile woman. If such were the case, then to tell it to each wife that came to me thus infected would be to ring the death-knell of her happiness. I can not quite

agree with this eminent writer because of the fact that I have treated such cases by divulsion, curettage, laparotomy, bisection of the ovaries and tubes, and they are to-day happy mothers. A report of such work can be found in my last paper read before the Alumni Society of the Woman's Hospital, and entitled "Conservative Work upon the Uterine Appendages."

I am well aware that it is claimed by operators and able writers that gonorrhœal infection of the appendages is usually bilateral. This may or may not be so. It is certainly not sufficiently well settled in the professional mind to warrant me in removing what is apparently a healthy tube and ovary because of the fact that the opposite one is the seat of gonorrhœal infection. I prefer rather to free it from adhesions, wash out the tube with a good disinfectant, release the ovary from pressure and tension, and give it another trial. And only when the intelligent practitioner recognizes such infection and applies the methods of treatment from vulva to ovary which, I think, I have sufficiently proven can be applied with safety, is he doing his full duty to his patient. That he can, if he so desires, is made manifest by the following report of a case:

A gentleman consulted me four days ago respecting the condition of his wife. She was treated by his family physician who called in consultation a second man, the latter recommending immediate operation. I was asked to see her as a third party and give an independent opinion. The woman was prepared for examination, and I at once recognized what I considered to be positive signs of gonorrhœal infection of the external parts. A simple digital examination showed the left appendage to be four times its normal size. I took the husband one side and in a positive manner asked him when he had suffered from gonorrhœa. This he absolutely denied at first, but later acknowledged that he had had it twice. The history of the wife's illness, extending over a period of years, tallied well with the repeated attacks or exacerbations of a gonorrhœal infection. The woman was in such a wretched condition that radical operation for the removal of the appendages would certainly have meant death. I at once advised aspiration of the appendages through the vagina, which was consented to, and ten drachms of pus were removed. This I sent to a microscopist without any history of the case, simply asking him for his knowledge of the contents of the pus.

The following letter received the same day corroborates the diagnosis:

"My Dear Doctor: The specimen of pus left on this date shows under the microscope numerous gonococci in the pus cells and free. There are also a few streptococci and two or three varieties of bacilli present, showing a mixed infection. The original infection was unquestionably gonorrhoea.

"Yours very truly,
(Signed) "F. A. LYONS, M.D."

Here was a case in which, from the husband's own confession, infection had taken place five years previously and had been kept alive by frequent exacerbations of the primary infection.

TWENTY-FIVE CONSECUTIVE SUCCESSFUL SUPRA-VAGINAL HYSTERECTOMIES FOR FIBROID TUMORS.

BY I. S. STONE, M.D., WASHINGTON, D. C.

The removal of uterine fibromyomata by abdominal section may now be considered not only a comparatively safe operation in competent hands, but we may even urge its performance when we obtain results which nearly equal those of ovariectomy. We can now claim that the operation known as supravaginal hysterectomy is a justifiable one. We are no longer in doubt as to the propriety of operating when our mortality list shows the possibility of having twenty-five or more cases recover *seriatum*.

The writer wishes it clearly understood that he regards the operation as always important, as never so simple as ovariectomy, that there are numerous difficulties and dangers, and, as a result, patients generally have more shock, and, consequently, more anxiety is experienced as to the result in each case. With but one exception, these operations were performed at Columbia Hospital, the other one at my private hospital. I never consent to operate in these cases in private. The resources of a hospital are, or ought to be,

considered indispensable for obvious reasons. For suture material silk is used within the cavity, but I close the incision with buried catgut, and would use it within the abdomen, were it necessary to do so. As silk is perfectly satisfactory, there can be no need for a substitute.

In nearly all of the operations it was possible to locate the uterine artery on one side, at least before amputating the uterus. This is the most important step in the operation, and is the one effectual preventive of hæmorrhage. In a few very complicated cases it is, however, impossible to find the artery.

Nearly all of these operations were done after the method of Baer, so far as leaving the stump of the uterus is concerned. In the first two the uterus was removed entire. After the third, the Baer method was followed in each case. It may be said by some that the list shows a large proportion of hysterectomies, and very few myomectomies. The writer frequently operates for small myomata, leaving the uterus and appendages entire, but purposely leaves them out of the present report, as they are in no sense hysterectomies.

<i>No.</i>	<i>Name.</i>	<i>Age.</i>	<i>Children.</i>	<i>Size.</i>	<i>Drain.</i>	<i>Remarks.</i>
1.	C. W.	28	No.	To umbilicus.	Yes.	First attempted salpingo-oöphorectomy, but was obliged to remove the tumor on account of hæmorrhage. Result perfect.
2.	M.	35	No.	To umbilicus.	Yes.	Dermoid cysts of both ovaries. Rectum and mesocolon badly involved. Very difficult operation. Much shock. Operation 70 minutes. Result perfect.
3.	B.	38	No.	Above umbilicus.	No.	Operation facilitated by special instrument for elevating cervix. Operation 45 minutes. Perfect recovery.
4.	B.	32	No.	Fibrocyst filling abdominal cavity.	No.	Numerous complications, such as bowel and omental adhesions.

<i>No.</i>	<i>Name.</i>	<i>Age.</i>	<i>Children.</i>	<i>Size.</i>	<i>Drain.</i>	<i>Remarks.</i>
5.	H.	37	Yes.	Large soft myoma, 13 lbs., 10 oz.	Yes.	Large omentum entirely removed. Extensive attachments to intestines. Exsection of right uterine cornua. Much shock. Patient has since borne a child at term. Operation 46 minutes.
6.	F.	43	Yes.	10 lbs., 12 oz.	Yes.	Extensive mesenteric adhesions posterior. Broad ligament abscess delayed recovery. Operation 60 minutes.
7.	C.	33	No.	Tumor nearly to umbilicus.	No.	Some intestinal adhesions. Otherwise uncomplicated. Ideal recovery.
8.	P.	4-	No.	Tumor fills pelvis.	No.	A very complicated and difficult case. Old salpingitis, pus sacs, etc. Annexa removed. Ideal recovery.
9.	C.	28	No.	4 lbs.	No.	Uncomplicated operation. Operation 55 minutes. Perfect recovery.
10.	K.	29	No.	3 lbs.	No.	But few complications. Operation without special incident. Ideal recovery.
11.	W.	30	No.	To umbilicus.	No.	Ideal recovery.
12.	W.	29	No.	4 lbs.	No.	Ideal recovery.
13.	H.	55	Yes.	Above umbilicus.	No.	Ideal recovery.
14.	U.	30	No.	Tumor fills pelvis.	No.	Ideal recovery.
15.	N.	41	No.	7 lbs.	No.	Large hard myoma. Ideal recovery.
16.	S.	47	No.	3 lbs.	No.	Soft myoma. Ideal recovery.
17.	P.	35	Yes.	3 lbs.	No.	Adherent posterior surface.
18.	C.	33	No.	Tumor reaches the umbilicus.	No.	No important complications. Ideal recovery.

<i>No.</i>	<i>Name.</i>	<i>Age.</i>	<i>Children.</i>	<i>Size.</i>	<i>Drain.</i>	<i>Remarks.</i>
19.	B.	28	No.	Soft myoma nearly reaches level of umbilicus.	No.	Left uterine artery had abnormal branch which extended posteriorly around base of tumor, caused severe hæmorrhage during operation. Rather tedious but perfect recovery.
20.	H.	35	No.	Soft myoma nearly filling pelvis.	No.	No complications. Easy operation. Ideal recovery.
21.	K.	46	Yes.	Tumor not over 3 lbs. Right side extending into broad ligament.	No.	Patient had very weak and irregular heart. Quick operation. Tumor out in 5 minutes. Operation completed in about 35 minutes. Perfect recovery.
22.	C.	40	Yes.	Reaches nearly to umbilicus.	No.	No important complications. Ideal recovery.
23.	Q.	27	No.	Small tumor only.	No.	Patient had previously had salpingo-oöphorectomy without beneficial result. Continued hæmorrhage necessitated second operation. Dermoid right ovary had been partly removed. Perfect result.
24.	J.	35	No.	Tumor to level of umbilicus.	No.	No important complications. Ideal recovery.
25.	H.	48	Yes.	3½ lbs.	No.	No important complications. Ideal recovery.

Fifteen patients were black; six were white; four were mulattoes; two had dermoid ovaries; ten had adhesions to viscera; four were soft myomata; two had severe shock after operation; none had hæmorrhage after operation; one had plebitis after operation; one myomectomy has since borne a child; one myoma had anomalous distribution of left uterine artery; twenty-three had amputation of the uterus through the cervix; one had slight suppuration in wound; twenty-five made perfect recoveries and are well at the present time.

With two exceptions all sat up comfortably in three weeks after section. Average, one month in hospital after operation.

1449 R. I. Avenue, N. W.

THE EFFECTS OF HEREDITARY SYPHILIS UPON THE
PLACENTA, THE CORD, THE FŒTUS AND
THE CHILD.*

BY J. DOUGAL BISSELL, M.D.,

Gynæcologist to the Out-Door Department of the Woman's Hospital and to the Demilt
Dispensary.

It is to the obstetrician the syphilographer must look for many of the facts serviceable in the solution of the various problems arising from the complex subject—hereditary syphilis. The features of it to which I ask your attention, pertain especially to the labors of the accoucheur.

If there should seem to be anything superfluous in the recital of the following cases, I would remind you, as an apology, of what has been related of Virchow, that when once recording observations which, apparently, had no bearing upon the immediate subject of investigation, he was asked why such records were made, and replied to the effect that nothing should be allowed to escape the attention of an investigator unrecorded, as such records might in the future be of infinite value.

CASE I.

Mrs. L., aged nineteen; primipara; a large, well-proportioned German girl. When first seen, July 1, 1893, was to all appearances in perfect health. She was admitted, while in labor, to the Old Marion Street Maternity Hospital, August 31, 1893; gravida; eight months; foetal heart sounds absent, and, from her account, foetus had been inactive several days. About the vulva and within the vagina, there was an abundant growth of warts, condylomatous in character, which had sprung up since the time she was first seen; no other evidence of syphilis was visible. Labor normal, but foetus was found macerated, and it had evidently been dead in utero several days. The placenta presented the condition commonly spoken of as fatty degeneration, and there was scattered through it deposits of chalky material. In the vessels of the cord, and, to some extent, in the

* Read before the Woman's Hospital Society.

vessels of the placenta itself, there were deposits of material so thick as to almost occlude these vessels, and make the cord, for the distance of about three inches from the placenta, hard and inflexible. The patient was a prostitute, and though a clear syphilitic history



Case I. Fig. 1. From Photograph of Syphilis of the Umbilical Cord, showing thickening of all Coats of the Vessel and Thrombi in the Lumen. (Teiss, 35 mm., Ocular Projection, 12.)

could not be gotten from her, the condylomatous condition of the vagina and the evidence in the placenta and cord, make it probably true that she was tainted with the disease.

CASE II.

Mrs. B., aged twenty-five, gave a syphilitic history, the disease having been contracted from her husband. She had previously

given birth to three living children, two of whom died in infancy from "weakness." She had had one miscarriage; was confined at the Old Marion Street Maternity Hospital December 16, 1893; labor normal, also placenta and cord normal. The child weighed 8½ pounds, and was apparently in perfect health. Two hours after birth it was placed to mother's breast and sucked vigorously.



Case I. Fig. 2. From Photograph of Syphilis of the Umbilical Cord showing thickening of all the Coats of the Vessels and Thrombi in their Lumen. (Teiss, 76 mm. No ocular.)

Twelve hours after birth it ejected from mouth a considerable quantity of dark, clotted blood; this was repeated six times during the following six hours. Subnitrate of bismuth, gr. v, was then administered, which seemed to quiet the condition for several hours; but seizures returned, the blood becoming, however, lighter in color, and without clots. Bismuth, gr. v; tannic acid, gr. j, was then administered, but without effect. The mother had a good supply of milk, and child was given the breast with regularity, but on no occasion was the milk seen to be ejected with the blood. The ejection

of blood continued to an alarming extent, increasing in amount and continuing bright in color. As I could find no bleeding surface in the throat, and as the blood was thrown out without being mixed with the contents of the stomach, I concluded that the source of trouble must be situated somewhere in the œsophagus, and probably near the throat. Thirty-six hours after bleeding first began the condition of the child was alarming, and it became evident that death was inevitable if hæmorrhage could not be checked. My efforts having heretofore proven ineffectual, I determined to resort to the following somewhat heroic treatment: With an ordinary glass-dropper, I injected down the throat, as far as I could reach, 3 m. of subsulphate of iron mixed with 4 m. of syrup. For some time after the child was almost in convulsions, expelling quantities of blood which had been coagulated by the Monsel's solution, but bleeding from that time ceased, and the child quickly regained its health.

CASE III.

Mrs. L., aged twenty-five; primipara; first married September 1, 1892, and contracted syphilis from her husband soon after. She was treated by an irregular practitioner. On January 21, 1894, she was admitted, in labor, to the Old Marion Street Maternity Hospital; gravida; six months; foetus born macerated, with abdominal dropsy, and looking more like a balloon than anything human. The condition of the placenta was that of fatty degeneration, and the cord was unusually thick from its junction with the placenta to within about a half-inch of its junction with the belly of the foetus, where the diameter suddenly became less than one-fourth that of the other portion. This section seemed to be almost deficient in the gelatin of Wharton, and the vessels very small. The specimen was secured for preservation, but was, unfortunately, thrown away with the placenta, through the mistake of an inexperienced nurse.

The mother's recovery was uneventful, and during her stay in the hospital—two weeks—she was given antisyphilitic treatment, which was continued at her home for about two months. Having secured a divorce from her husband, she soon remarried. The second husband, by whom she immediately conceived, was in good health and entirely free from syphilis. During this second pregnancy she did not submit herself to treatment, but her health re-

mained excellent until the seventh month, when her feet, limbs, and abdomen began to swell.

CASE IV.

At the completion of the eighth month, December 20, 1894, I was suddenly called to deliver her. The urine, which was tested immediately after labor, contained no albumen. Presentation of child, breach, and was so delivered; it was born well-formed, but macerated. The placenta was like that of her first child, large, thick, yellowish, and extremely friable. The amniotic sac was enormously distended with fluid, constituting the condition known as hydramnion. The head of the child, though not of unusual size, occasioned on its passage considerable laceration of the perinæum, which was repaired immediately, the parts uniting kindly. The death of this child was a great disappointment to the mother, and she expressed willingness to undergo treatment, if by so doing she could be given any hope of having a living child; syphilitic treatment was thereupon begun and persisted in. She soon conceived again.

CASE V.

She was delivered January 4, 1896, of a well-developed, and to all appearances healthy baby. Labor slow and tedious; position L. O. A.; vaginal secretion scant; forceps were applied because of uterine inertia. As soon as the head was brought well under the arch of the pubis, and pressure made by it on the perinæum, the forceps were withdrawn and the head forced forward by pressure from above. To my great discomfiture, the perinæum gave away completely, the laceration extending through the sphincter, more than an inch up the rectum. It was, however, immediately repaired, with a satisfactory result. It is probable that the extreme friability of the tissue which was shown in the last two confinements, bore an intimate relation to the constitutional disease. It may be of additional interest to note that for several months the patient continued treatment, and had an abundance of milk. Without being so advised, she discontinued treatment, and the milk immediately diminished in quantity; so marked was the effect that she soon resumed treatment, of her own accord, after which the milk again became plentiful. As far as is known, the child has never shown symptoms of an inherited disease.

CASE VI.

Mrs. S., aged nineteen; primipara; was first seen during the early part of July, 1896; examination showed no evidence of syphilis, and previous history was free from suspicion; she was confined at the Old Marion Street Maternity Hospital, 1896. The child presented a normal appearance at birth; two weeks after, dark red marks appeared on the feet, followed by a rash covering the body, which rash was mistaken for prickly heat. In the region of the rectum and genitals there soon appeared numerous moist papules, and in the mouth two mucous patches. The mother had received no treatment up to the time the disease showed itself in the child, but in medicating the child, it was thought advisable to medicate the mother also. The babe responded to treatment, and the disease seems now to be under control. It was impossible to secure from the father a statement of his past history, but the mother observed a "canker sore" on his tongue, and stated that, during the first few months of matrimony, he was taking pills marked bi-chlorate of mercury; also a liquid medicine. The disease presented in the child was undoubtedly hereditary syphilis. The statement of the mother concerning the father's condition, points to the origin of the trouble.*

The cause of death of syphilitic children, in utero, is, in the vast majority of cases, I believe, due to a diseased condition of the placenta or cord rather "than to the breeding of the syphilitic virus in the fluid of the foetus itself." Hutchinson has observed that "if this be not so, it is exceedingly difficult to explain why the majority of syphilitic infants should be born plump and well-nourished, and remain a month or so without symptoms, while others, on the contrary, perish at, it may be, an early period of intrauterine life." (Hutchinson, p. 78.) Of the cases herein reported, three were born dead and macerated, and in each there was positive evidence of fatal interference of the blood supply to the foetus. In the cases born alive, no evidence of disease was appreciable in the placenta or cord. You will observe in the specimen secured from the first case that the vessels of the cord are occluded for about three inches by a deposit evidently the result of inherited syphilis. In the third case the pla-

* This case was sent to me through the courtesy of Dr. George S. Thompson. I did not take charge of her confinement, but had her under personal observation before and after.

centa presented a condition commonly known as cheesy degeneration, thick, yellowish in color, and very friable, the disease being situated in the villi, transforming the placenta into a non-functioning organ. There was also at the junction of cord with abdomen a want of development in the cord itself. The vessels at this point were open, but were not sufficiently large to allow the requisite amount of blood to pass to and fro, which condition was, undoubtedly, an active factor in the early death of foetus. Hydramnion, a condition often found in and somewhat characteristic of a syphilitic pregnancy, existed in the fourth case, and was evidently the result of interference in the foetal circulation occasioned by the diseased placenta. The second case, that of hæmorrhage from the æsophagus, is of interest only in regard to the peculiar nature of the lesion developed, and the method resorted to in controlling it. The probability is that other lesions will in time arise. The third, fourth, and fifth cases were born of the same mother who was infected by the first husband. In the third case, the foetus died at about five and a half months; in the fourth case, foetus was carried eight months; its father was the second husband, who was in perfect health. The diseases of the placenta, in these cases, were much the same in appearance. The early death, in the third case, was evidently due chiefly to the want of development of the umbilical vessels, and had this abnormality not existed, the foetus would probably have had a longer life. With regard to the fourth case, the question might well be asked, Would the foetus have survived had labor been induced at or about the seventh month? The mother was positive of having then felt life. The child was large and well-developed; the only evidence of its having died previous to labor was that the cuticle could be easily removed. Would it then be justifiable, in syphilitic cases, where hydramnion exists to a marked degree, to induce labor when the age of viability has been reached? This question would have been seriously considered if her third pregnancy had presented the same condition, but the history of this pregnancy was normal: the child was born at full term, and, to all appearances, in perfect health. The mother was under treatment during the entire time between the second and the last labor. We know "that the syphilitic diathesis is not always active in the diseased person" (Morrow, p. 610), and the question may here arise, Was the violence of the disease, in this case, affected by time, or was it abated and controlled

by treatment? We may not be able to assert with positiveness that we are indebted to the treatment for the living child, but knowing as we do the positive benefit which the iodides have upon syphilis in this stage, there is no question as to what our duty is when called upon to advise medicinally in such cases. The last case is one not infrequently met with, and is typical of that class of cases where the mother seems to be a "protected victim." Although she nurses her child, there have as yet appeared no signs of infection. This paper is not written with the object of advocating any one theory regarding the way inherited syphilis is transmitted when the father alone shows evidence of the disease. My personal experience is far too limited to justify me in assuming the position of an advocate, but I trust it will not be considered inappropriate if I allude to some of the ideas upon this subject. All are agreed as to the manner of transmission when both parents are diseased, or when the mother alone is diseased, but some differences of opinion seem to exist as to the mode of transmission to child when father alone is diseased and the mother remains apparently uncontaminated. Bulkley is of the opinion that, under these circumstances, the poison is conveyed through the semen to the ovum, and through the utero-placental circulation to the mother in turn, she becoming, in the majority of cases, a "protected victim." (Morrow, pp. 66, 67.) Dr. Denslow Lewis, of Chicago, advocates the view that the maternal influence is supreme, and believes "that hereditary syphilis is due to the syphilis of the mother, and never to any other cause." (The *Chicago Clinical Review*, pp. 281, 282, 283.) Dr. Robert W. Parker, of London, in a recent paper, has arrived at these conclusions, among others, that "in reply to the question, Can a healthy woman give birth to a syphilitic child? the answer must be no." "Many women give birth to children who suffer from what is called 'inherited syphilis,' without themselves appearing to be infected. The explanation is obvious; this 'inherited syphilis' is not syphilis in the true sense, and the mother's so-called escape depends on this fact." He prefers the term "inherited from syphilis" rather than "inherited syphilis." Dr. Lewis considers conceptional syphilis an absurdity. The negative result of Mireur's experiments is his chief argument in support of this view, but the comparatively limited number of these experiments would seem insufficient alone to combat successfully a doctrine which our everyday experience and observation would appear

to substantiate. Mireur may be correct in his deduction, but further proof by clinical observation is necessary to establish such a theory. Dr. Parker, it would seem, advocates the view that with a syphilitic child the mother must necessarily be syphilitic, the condition of the father making no material difference; but when the condition is "inherited syphilis," or "inherited from syphilis, as he prefers to term it, the mother may, and oftentimes does, escape infection, the transmission of the disease being direct from father to child. The question may then arise, Have these advocates the same condition in mind when they use the terms "hereditary syphilis," "inherited syphilis," and "inherited from syphilis?"

In the treatment of the subject, hereditary syphilis, there are involved many factors. It matters not how conscientious and trustworthy the investigator may be, he is often led into error not only by his own observations, but also by the statements of those upon whom he must necessarily rely for information. Looking at it, therefore, from whatever standpoint we may, it is most complex and confusing, and appreciating fully my inability to fathom it, I would have you consider the object of this paper chiefly that which prompts an observer in any department of science to record facts which may be of future use in arriving at the correct solution of problems to which these facts pertain.

The accompanying illustrations are from photographs taken by Dr. J. F. Fordyce.

THE CHANGES IN THE UTERINE MUCOSA DURING
PREGNANCY AND IN THE ATTACHED
FÆTAL STRUCTURES.*

(Continued.)

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The Early Relations Between the Ovary and Decidua.

In a considerable number of mammals these have been carefully studied. In the human subject the earliest stages of development yet require investigation. A thorough examination and comparison of the cases that have so far been published is very instructive, and is suggestive of the links that are still wanting to complete our knowledge.

In Merttens' early specimen (Fig. 253), obtained from a curetting supposed to be six to eight days old, the chorionic vesicle was embedded in the serotina and reflexa, the diameter of the vesicle being about 3 by 2 mm. Its outer surface was covered with villi measuring .5 mm. and less in length; they were simple or only slightly branched. Most of the villi were at right angles to the chorion; some were oblique. Many were attached to the decidua serotina. They were composed of a covering of epithelium containing a core of connective tissue. The epithelium consisted of an inner layer, Langhans' Zellschicht, and an outer one of deeply staining nucleated plasmodial protoplasm, *syncytium*. On the surface of the reflexa and the serotina was found an irregular layer of syncytium, continuous with the outer epithelial layer of the villi. In the intervillous space maternal blood was found; decidual sinuses had therefore already opened into it.

In Reichert's thirteen- to fourteen-day specimen the chorionic vesicle was lens-shaped, measuring 5.5 mm. in the long diameter

* Read before the Royal Society of Edinburgh and awarded the first Research Prize of the Royal College of Physicians of Edinburgh in 1896.

and 3.3 in the short one. There was an equatorial zone of villi, the polar regions being smooth; one was smaller than the other. The small one was in relation to the serotina. The villi varied somewhat in size. They averaged about .2 mm. in length, were thick and rounded at the ends and mainly unbranched. Reichert said that they consisted entirely of foetal epithelium, and contained no connective tissue core. Most of them were hollow. (It is unfortunate that Reichert's specimen was not carefully hardened and examined microscopically. We can not now form a complete idea as to the conditions present.)

In Breus' twelve- to fourteen-day specimen the chorionic vesicle was somewhat round, measuring about 5 mm. in diameter, including the villi. The latter measured from .07 to 1 mm. in length. They were thick and mostly unbranched. In one spot there were no villi. The villi were largely epithelial in nature, though some contained a core of connective tissue.

In Schwabe's thirteen- to fifteen-day specimen, the plasmodial nature of the outer epiblastic covering of the chorion and villi was noted. He also described extensions of plasmodium on the surface of the decidua.

In Spee's second-week specimen, the same thing was noticed. Some of the villi consisted entirely of epiblast, and were attached to the decidua. Others contained connective tissue.

In Kuppfer's three- to four-week specimen though villi were found over the whole chorion, they were most strongly developed in an equatorial band. The covering epithelial layer consisted of an outer and an inner part. The outer layer of syncytium was of the same nature as that on the decidua. Processes extended into the latter, and in two places were seen to penetrate sinuses.

In Keibel's supposed thirteen- to fourteen-day specimen, the continuity and identity of the syncytial layer on the decidua and the outer covering of the villi was easily recognized.

In Kossmann's two- to three-week specimen the same points were made out.

Other early specimens have been described, but they need not be particularly noticed.

From a careful study of the whole series it is evident that either the exact duration of pregnancy has not always been correctly estimated or that the early ovum is subject to considerable variations

in regard to its rate of growth, its shape, the appearance and rapidity of development of the villi. For example, in Reichert's supposed twelve- to thirteen-day specimen, the chorionic vesicle had two smooth surfaces devoid of villi. In Merttens' supposed six- to eight-day case the whole vesicle was covered with villi. In Breus' specimen, supposed to be about the same age as Reichert's, only one spot was devoid of villi. In the specimens of a more advanced age than Reichert's either the whole vesicle was covered or one spot was bare.

In fact, in the various descriptions, there is such a lack of uniformity that exact comparisons can not be instituted. A great omission in most of them is a careful account of the foetal epiblast and its relations to the decidua.

As far as our knowledge goes, we may be justified in making the following statements regarding the relationship of the early ovum to the decidua in the human female.

1. The chorionic vesicle becomes completely invested by the decidua reflexa during the second week. (If we can believe Merttens to be correct regarding the age of his specimen, it will probably be about the beginning of that period. As I have stated, either Merttens is wrong or the time is variable.)

2. The earliest condition of the chorion and villi is one in which the structure is entirely epiblastic.

3. This epiblast in the earliest described cases consists of an outer layer of nucleated protoplasm, plasmodium-like, in which distinct cell-division can not be made out, and an inner one in which the cell outlines are more or less clearly defined.

4. Villi are found during the second week, some of them being attached to the decidua. When they first appear is not known. Neither is their earliest distribution known. (The supposition is that they begin as an equatorial band, gradually extending over the whole chorion.)

5. Simple branching of several villi is found in the earliest described specimens.

6. Processes of the plasmodial layer early grow from the surface of the chorionic vesicle and from the villi.

7. On the decidual surface is a layer of plasmodial nucleated protoplasm, apparently of the same nature as the outer layer of foetal epiblast; and, in fact, directly continuous with it where villi are at-

tached to the decidua. Irregularly-shaped masses of this syncytial layer project from the surface layer into the intervillous space, some of which have a reticular structure. Processes also extend downward into the substance of the decidua.

8. Maternal blood is found in the space between decidua and ovum during the second week; that is to say, in the space which is lined by syncytium or foetal epiblast.

I have described similar appearances in specimens of early tubal gestation, and from a comparison made with the conditions found in certain mammals, especially the Insectivora, have suggested a possible explanation of the early relationship between ovum and decidua in the human subject. I have referred chiefly to the studies of Hubrecht, whose investigations on the embryology of the hedgehog have received very scant attention among recent workers.

Hubrecht has shown that when the early ovum of the hedgehog is attached to the decidua, a proliferation of the epiblast takes place, forming a plasmodial layer of considerable thickness. Vacuolation occurs at different points in it, whereby a reticulated structure is produced, which, therefore, forms the connection between ovum and decidua. That part of the epiblast which is in contact with the decidua is termed by him the *trophoblast*. (Figs. 254, 255.)

In his lately-published paper on the trophoblast and amnion, Hubrecht, from a comparison of the results obtained by himself and others in the investigation of the early ovum in different mammals, comes to the following conclusions:

1. The outermost part of the covering of the blastocyst takes no direct part in the formation of the embryo.

2. This layer, the so-called trophoblast, serves in the first place in the fixation of the ovum to the maternal tissues, and then, by the marked proliferation which takes place in it, at a certain part or in its whole extent, for the nutrition of the ovum.

3. The formative epiblast of the early embryo in the germinal area is, from the first, under cover of the trophoblast, the relations between the two layers varying somewhat in different mammals.

I believe that the conditions found in the earliest specimens, both of ectopic and uterine gestation in the human subject, point strongly to the occurrence of somewhat similar changes. In my "Ectopic Pregnancy" I have referred to these as follows:

"So, too, it is probable that in the human ovum—whether from

the whole blastocyst or parts of it is not certain, although from the early ova described, possibly only part may undergo the change—the outer epiblastic layer, on entering into relationship with the decidua gets to consist of a thick nucleated protoplasmic mass which attaches itself to the decidua, to the serotina, and also the reflexa. As growth goes on vacuolation appears in the mass, so that the ovum becomes connected to the decidua by a reticulated, nucleated, protoplasmic structure. The outermost portion, which first came into contact with the decidua, forms a layer, which remains, however far the vacuolation is carried on; it corresponds to the outermost portion of the epiblast in the case of the hedgehog, and like it, may be called the *trophoblast layer*.”

There is, it seems to me, another possible interpretation of the appearance found in early human pregnancy, viz.: that when the smooth blastocyst comes into contact with the decidua, outgrowths of epiblast occur, which, on reaching the decidua, extend over its surface, forming an irregular layer, from which prolongations extend afterward into the decidual substance. This account, however, does not seem to me so feasible as the other, and offers no rational explanation for the formation of the reticulated masses or of the irregular projections from the epiblast on the surface of the decidua; whereas, their description as remnants from the early reticulated connection between ovum and decidua is thoroughly intelligible.

It is certain, moreover, that in the process of attachment of the great mass of villi, which leads to the establishment of the permanent placenta, the plasmodial outer layer of the villi becomes broken up, as the deep cells of the epiblast in the ends of the villi proliferate to form a large, adhesive surface.

As I have pointed out, in specimens of ectopic gestation only a few villi are to be found attached by stalks of the outer plasmodial epiblast layer, and these I regard as having arisen from the extension of the mesoblastic elements of the chorion into strands of epiblast, the remains of the reticulum extending from decidua to ovum. As regards the probable functions of the early epiblastic proliferation, I would suggest the following:

1. It seems to fix the ovum to the mucosa. It is generally supposed that the earliest fixation takes place by means of villous projections of the *Zona pellucida*. In the human subject, however, nothing is known about the part played by this transient structure.

2. The trabeculæ of the early epiblast reticulum probably serve as pathfinders for the future permanent villi.

3. The absorption of nourishment for the early ovum is probably an important function of the proliferated epiblast.

Recent workers have pointed out that in many mammals the epiblast has apphagocytic action, and it has been supposed that this activity is associated with the absorption of nutriment; hence the name "trophoblast" given by Hubrecht to the layer particularly concerned in the process.

It is extremely likely that the very early disappearance of the surface epithelium on the decidua serotina and on the decidua reflexa is due to the phagocytic action of the outer epiblastic layer. For, it is important to note that, on the surface of the vera in relation to which the foetal epiblast does not enter during the early stages of pregnancy, there is no such rapid disappearance of the epithelium. It takes place there only gradually after weeks, chiefly through mechanical stretching and separation.

I think it is scarcely necessary to dwell long on the view of some of the older writers and of one or two recent workers, *e. g.*, Merttens and Kossmann, that the plasmodial layer to which I have been referring as the trophoblast is not of foetal but of maternal origin, that it is, in fact, but the altered surface epithelium of the mucosa.

The careful work of the last-mentioned writers is considerably marred by their non-recognition of the part played by the foetal epiblast. Their view that the syncytium is derived from the uterine epithelium and that it extends over villi and chorion is absolutely untenable. There can be no doubt that the changes in the glandular and surface epithelium are of a degenerative nature and in no way to be associated with an activity which extension over the villi would involve. It is unreasonable to attribute to dying cells such power as would be necessary to produce the extensive protoplasmic investment found on the chorion and villi. Moreover, careful study of the changes found in the degenerating gland-epithelium shows that a *debris* is formed which is entirely different in structure from the layer of syncytium on the surface.

Merttens and Kossmann have made no reference to the work of Hubrecht and later writers, who have considered the trophoblasti-action of the epiblast as the cause of the disappearance of the degenerating epithelium on the surface of the serotina and reflexa. Had

this work been known to them they could not have concluded that the plasmodial layer on the decidua was altered uterine epithelium simply because it occupied the position in which this epithelium is found in the non-pregnant uterus. They would have understood that the plasmodial layer is only that part of the foetal epiblast which had applied itself to the decidua, and had destroyed the surface epithelium, thereafter occupying its place as a surface layer.

If their hypothesis be true, it is most remarkable that the epithelium of the serotina and reflexa should undergo a proliferative development into the layer of syncytium while that of the vera should show only progressive degeneration and disappearance; whereas, in respect to the changes in glands, interglandular tissue, and blood-vessels during the first few weeks of gestation, all these parts of the decidua should present such similar appearance.

But, it is not necessary to discuss this point further. The work of Kastschenko, Minot, myself, and others, has established definitely the identity of this plasmodial layer on the decidua with the outermost covering of the chorion and villi; both being, beyond doubt, of foetal epiblastic origin.

4. Besides absorbing the decidual substance, the surface plasmodial layer, along with the prolongations which extend into the serotina probably also absorb lymph. But, in addition, it is likely that these downward extensions serve another purpose, viz.: the establishment of communication between the maternal sinuses and the intervillous space. I was led first to put forward this view from the appearances presented in my specimens of early ectopic gestation. Merttens has also noticed syncytial masses extending into the maternal blood-spaces without, however, attaching any significance to the appearance. I think that this suggestion is the most likely explanation of the means by which blood circulation is set up in the intervillous space. It is much more reasonable than the belief that there is a haphazard bursting of the maternal vessels, with the consequent pouring of blood among delicate villi which at first can not have a very firm attachment to the decidua.

The old teaching that the villi themselves dipped into the maternal sinuses is, of course, not to be any longer held. As I have shown, such an occurrence very rarely takes place. This view was based upon a wrong interpretation of the appearances found on microscopic examination.

I have pointed out that several observers have noticed blood in the intervillous space during the second and third weeks of gestation. Now, if nothing determined the establishment of a communication with the maternal vessels, and if they opened of their own accord, one would expect that the large sinuses in the compact layer of the vera, which are, during the first few weeks, as markedly enlarged as are those of the serotina, would rupture also. This does not happen, however, in normal cases.

The very early relationship which is established between the foetal epiblast and the maternal blood, at an early period of the development of the serotina, must undoubtedly be explained by the nutritional requirements of the ovum. The yolk-supply in the human ovum must be of insignificant importance, and direct absorption from the decidual substance can not suffice for the rapidly-developing embryo. It is necessary that maternal blood be brought into contact with a large surface of foetal epiblast. In the earliest condition, the blood bathes epiblastic stalks before the mesoblastic layer of the chorion has extended into them with its loops of capillaries.

It is interesting to note that Kossmann, though he has mistaken the nature of the early plasmodial connection between ovum and decidua, has recognized its vacuolation and has described the pouring of maternal blood into the spaces of the reticulum. Hubrecht has shown that this process occurs in the hedgehog and shrew, while M. Duval has amply demonstrated it in several of the rodents, and E. van Beneden in the bat.

This condition might be termed the first or primitive placental arrangements. Duval, who strongly believes in such a method, says: "*Le placenta représente à son origine, une hémorragie maternelle, circonscrite ou enkystée par des éléments fœtaux ectodermiques.*" When chorionic mesoblast with its capillaries penetrates the epiblastic stalks, the permanent placental condition has begun to be established.*

* This distinction between a primitive and permanent placental arrangement in the human subject, which I have urged in the case of ectopic as well as in uterine pregnancy, will be noted with interest by those who have read the recent publication of John Beard, Lecturer on Comparative Embryology in the University of Edinburgh, entitled "On Certain Problems of Vertebrate Embryology." This suggestive writer has advanced the thesis that there is an *antithetic alternation in the development of vertebrates*, the transition period forming a so-called "*critical stage*." He has challenged the truthful-

Not only do the plasmodial strands open into the decidual sinuses; they may sometimes spread over their walls, becoming irregularly attached to them. Or pieces may be carried away by the blood stream.

Sometimes at the surface of the decidua, where a sinus opens close to an attached villus, the plasmodial layer on the latter may appear to be continuous with the layer on the villus. It is probably this appearance which has been wrongly described by several observers as a prolongation of the endothelium from the maternal vessel over the villus. Keibel has recently made this mistake. This error is most likely to be made when the plasmodial layer, which has become attached to the vessel-wall, has become somewhat flattened out.

As I have already pointed out, it rarely happens that a villus extends into the mouth of a sinus. Sometimes the epiblast covering its end may appear to be continuous with the wall of a neighboring sinus or sometimes a growing villus may dip into the mouth of a sinus which has already been opened into and become attached to the sinus-wall. The great majority of the villi, however, are attached to the surface of the decidua, with the advance of pregnancy, the plasmodial layer on the decidua became more flattened and broken up. It does not grow with the increase in the surface-area of the decidua. On the villi and chorion, also, the same layer thins, and largely disappears with advancing pregnancy. There is, also, relatively, much less plasmodial material found in the substance of the decidua at the end of pregnancy than in the early months.

ness of the well-known dicta termed "von Baer's law," and puts forward his own views in the following words:

"There is a stage in the development of every vertebrate embryo, during which, and only then, it resembles the embryo of any other vertebrate in a corresponding stage in certain general features. But, while it thus agrees exactly with any other embryo in this stage in characters which are common to all vertebrate animals, it differs from the embryo of any other class in certain special class-features, and also from any other embryo of the same class but of a different order in other and ordinal characters. Immediately before this stage is reached, it begins to put on generic and specific characters, and thus it then begins to differ from all other embryos in these."

He believes that in all Eutherian mammals the transition from the phorozoon or larval stage to the gametozoon or advanced stage is marked by the change *from the primitive to the permanent connection between ovum and uterus*. Duval and Hubrecht have clearly shown the temporary and evanescent character of the early epiblastic structures (ectoplacenta, diplotrophoblast) joining ovum and uterus, in several mammals.

OBSERVATIONS ON CASES OF PREGNANCY, COMPLICATED BY KIDNEY AFFECTION.*

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The author read notes on nine cases which had come within his experience, of which three are here given, and then proceeded as follows:

I am always impressed by the gravity of the situation in cases of marked albuminuria in pregnancy, and an expression of opinion from those present, who must have had large experience can not but be of value to us. These cases have arisen, some in my own practice, and some in the maternity department of the District Nursing Association, and I watched three cases of eclampsia in the Frauenklinik at Berlin last year. The practical questions that arise in each case of marked albuminuria in pregnancy, apart from other symptoms, are what amount of albumen is one to regard as dangerous to the woman—either to her life, immediately, or to her health after delivery, and how far is the albuminuric state of the woman dangerous to the life of the child? Ought one to induce labor directly the child is viable, or ought one to wait for other symptoms of more serious import than the presence of much albumen? Is one to be influenced by the amount of urea passed every twenty-four hours? Ought one to keep the woman in bed absolutely? Ought one to put her on special diet, and under treatment, or are these useless? Is one to consider the presence or absence of casts as of much importance in forming a prognosis? Are retinal lesions to be considered of much importance except in so far as they endanger future vision? For my own part, up till lately I have felt that the most important point to decide in one's own mind is whether the kidney affection is recent or not. And toward this, in addition to the history, the state of the retina and cardio-vascular system would largely guide us, but the presence or absence of casts I be-

* At the author's request, we publish this paper which was read before the Cambridge Medical Society, Nov. 6, 1896, and appears in its Transactions.—Editor.

lieve to be of little help. *If there has been kidney mischief of old standing* and the albumen amount to one-third, and there be some œdema, then I think one ought to terminate the pregnancy at once for the woman's sake—the more so as the chance of life for the child would be small, as premature labor will almost certainly occur. If the pregnancy be allowed to go on, the child's chances of life grow less and less. *If, however, the albuminuria has seemed to be only due to some temporary upset in the kidneys and their vascular system*, then I have thought that the chances for both child and mother are better and pregnancy might be allowed to proceed until the albumen is at least two-thirds, other serious symptoms being absent—but sickness, headache, or vertigo would indicate that delivery was necessary. The woman should, I think, be kept in bed, should be put on milk diet, and should have hot baths, hot pack, etc., and be given diuretics if the amount of urine be scanty; while perchloride of iron should be tried. Retinal changes seem very variable in extent, and unreliable as indications. Unless there be marked kidney disease of old standing, these patients get well if delivered early enough, and some do well if left to full term. They often have no such symptoms in the next pregnancy, and primiparæ are oftener affected than pluriparæ. One would like to be able to divide these cases into those *with*, and those *without* previous kidney disease, but this is *practically* impossible. It must be borne in mind that if the kidney affection be due to pregnancy only—then the patient will probably recover perfectly, and that would lead one to let her go on until the child is viable. But, on the other hand, we can not be *sure* of the soundness of her kidneys, and meanwhile she may be sustaining irreparable damage to her kidneys. All the time, moreover, the patient is on thin ice, inasmuch as an alteration in the blood pressure, or in the constitution of the blood, may at the shortest notice induce eclampsia. Again, in favor of early induction of abortion or labor, there is the fact already stated, that (as far at any rate as my knowledge and experience go) primiparæ are especially liable and many women have a perfectly normal course in their subsequent pregnancies. Is this the experience of other members present? I am inclined to think that we must not attach too much importance to the mere albumen unless in *very large* quantities, for we have the fact that fifteen per cent. of pregnant women have albumen, and we know also that ovarian or fibroid tumors also cause albuminuria,

which disappears after their removal. How curious it is that the general surgeon dreads so much, and not without reason, operating on a patient the subject of albuminuria, whereas the gynæcologist relieves a patient of large tumors, or the contents of her uterus, with confidence, knowing that her state will be at once improved. This drives one again to wonder what can be the casual influence of this kidney affection of pregnancy. And again, why has eclampsia never been known in cases of albuminuria due to abdominal tumors—the amount of albumen is sometimes considerable. I am bound to say that, considering how safe a procedure the induction of labor or abortion is, and considering the grave dangers the woman may be incurring, and that if a primipara she will very probably not have the trouble in her second pregnancy, I think that premature labor should be brought about much more often than is customary, or even artificial abortion; especially as the child's life is seriously compromised by waiting and its chance of being a useful child is small, even if it be born alive. *Pronounced* albuminuria should always raise the question of early termination of gestation; but I think the patient should always be tried with suitable diet and treatment, for occasionally they improve much. I feel also that this is a subject in which obstetricians particularly need the help of physicians and physiologists, particularly those who make a special study of kidney diseases. It would be presumptuous to generalize as to the mutual effects of pregnancy and kidney disease from a limited experience, but the phenomena to which I have drawn attention show that such effects exist. The study of the experience of many is the only way of attaining definite and useful knowledge on the subject, hence the importance of hearing the opinions of members who must have had large midwifery experience. This, combined with a due consideration of the theories hitherto expounded.

The theories as to the causes of albuminuria, apart from pre-existent kidney disease, are that it is due to:

1. Pressure on the renal veins, or other vessels.
2. Pressure on the ureters.
3. The increased work thrown upon the kidneys, owing to their having to excrete the waste products from the fœtus, and enlarged uterus.
4. The generally increased arterial tension which is usual in pregnancy.

5. A reflex nervous influence starting from the pregnant uterus as a source of irritation, and disturbing the circulation or secretion of the kidneys, as that of the salivary and of the thyroid glands are in some cases disturbed.

6. That it is dependent on a germ.

It is hard to choose between these various causes. Probably more than one cause, or even more than two of them, have to be combined to produce marked albuminuria in a pregnant woman without preëxistent kidney disease. It seems to me to be probably due to an auto-intoxication by a toxin, which is produced by the increased tissue metabolism and upsets the normal metabolic equilibrium of the renal epithelium, combined with altered blood pressure. Long series of cases and observations are required to guide us. At present we must not dogmatize. We may each have our *opinion*, but no one yet can pretend to have a certain knowledge. *One thing is certain—that every pregnant woman should from time to time have her urine examined.*

Cases.—Mrs. X., twenty-six, primipara. Seven months gone. Had scarlet fever at fourteen. Has had indigestion with much sternal pain. Eyelids and ankles swollen. One-sixth of albumen. Ordered warm clothing, warm room, hot baths, and milk diet and liq. ammon. acetat. Albumen increased to one-fourth. Patient kept in bed and carefully nursed. She says she feels quite well. Amount passed 30 ounces. In five days' time albumen somewhat less and the amount 40 ounces. Puffiness of eyelids less and œdema of ankles gone. Amount of urine, 60 ounces. Then albumen went steadily to one-third, and then fully two-thirds. Sickness complained of on waking one morning. At $7\frac{1}{2}$ months labor was induced by bougie. It came on twenty-four hours after insertion of bougie. Healthy small male child. Placenta shows degenerative and hæmorrhagic patches, child weighed 3 pounds 12 ounces. Albumen was increased the morning after labor. On third day it was one-twelfth, then on fifth day one-twentieth. On sixth day rose again to one-sixth, then to one-fifth, but then diminished.

Mrs. —, 12 — Street, June, 1894. Primipara, $8\frac{1}{2}$ months gone. Legs began to swell six weeks before, after having been at a dance, and dancing a great deal. Swelling began the next morning. Urine half solid with albumen. No history of scarlet fever. I saw her at 12 o'clock, June 18. Legs much swollen—eyelids very

puffy. Slight sickness. Abdominal wall pits on pressure. Pulse, high tension and slow. No foetal heart. I introduced bougie. At 3:30 there were slight pains, and bougie came out. Dilated os with finger and ruptured membranes. Child was dead—a small female, not œdematous. Slight post-partum hæmorrhage. Œdema gradually disappeared. On June 22, *i. e.*, fourth day, only a trace of albumen. Patient made good recovery. In August, 1895, another child born; pregnancy and *labor normal*.

Mrs. —, twenty-eight, primipara. At end of seventh month noticed her feet and legs swelling. During the first half of eighth month she was treated by suitable diet, rest, and drugs, with no improvement. Urine at first had one-third albumen, then one-half, then three-quarters, and on 11th of June was solid on boiling. I then advised her to have labor induced. There were a few casts in the urine. On June 12 I induced labor by introducing bougie. It took twenty-four hours. Child weighed just under four pounds. Labor normal. Albumen diminished rapidly, and on the fourth day was only one-quarter. On the sixth day it rose again in quantity, but on the tenth day had almost disappeared. All the œdema of legs had disappeared at the end of three or four days. There was also some ascites. Patient never had scarlet fever, and was never known to have any kidney trouble; she had been very pale and anæmic looking for a year.

MULTIPLE FIBROIDS OF THE UTERUS, COMPLICATED BY PREGNANCY: TRIPLETS; HYSTERECTOMY.*

BY WILLIAM JEPSON, B.S., M.D., SIOUX CITY, IOWA.

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During the time allotted me by the society, it is my wish briefly to relate to you the clinical history of a patient whose uterus was the seat of multiple myomata, or what is generally spoken of as uterine fibroids, and which was complicated by triple pregnancy (or the pregnancy was complicated by the uterine myomata, which ever way you will have it). And in speaking of complications let me here mention that before I had solved all the possibilities and probabilities in the case, I was much impressed with the fact that the diagnosis was also complicated, if I may use that term, and it is for this reason that I report the case.

The lady in question, Mrs. C., was thirty-six years of age, an American by birth and a Caucasian. Her family history was devoid of any features of interest. Both parents, four brothers and four sisters, were living and in excellent health. One brother and two sisters dead. The brother died of pneumonia at the age of sixteen years, and one sister in infancy, and one during confinement at the age of thirty-eight, after being the mother of several children; cause of her death not known. The patient menstruated first at the age of thirteen, and at fifteen began menstruating with regularity which continued till after her marriage at the age of thirty-five. The amount of menstrual flow was always about the the same, and what to her would seem normal; the same lasted from three to five days.

During the past few years she suffered slightly from pelvic pain for a day or two prior to and during menstruation, but at no time did she suffer from menorrhagia or metrorrhagia. She had always considered herself well until shortly after the time when she presumed that she became pregnant. September 16, 1894, she was married to the husband of her dead sister (this being her first marriage). About the middle of August, 1895, she menstruated for the

* Read before The Medical Society of the Missouri Valley, March, 1896.

last time. I here append the report of her physician, Dr. Stidworthy, through whose kindness I saw the patient:

"September 29 I was called for the first time to see the lady, owing to pain which she complained of referable to intrapelvic organs; she considered herself pregnant, in which I concurred, but I observed that her condition was not a normal one, as a fair-sized tumor was discernible in the right iliac region.

"November 18 I again saw her, at which time her abdomen was much distended and the rate of increase had been greatly in excess of what I had expected to observe, even with the pregnancy complicated with a growth as it is. I have requested that they consult you, as there is much concerning her condition which I do not clearly comprehend." I was first consulted by the patient on the 20th of November, and at this examination, which was conducted in my office without anæsthesia, the abdomen upon inspection gave evidence of being distended by some intra-abdominal mass to a degree about that which is observed in the average pregnant woman at about the seventh month. Percussion gave resonance in the flanks as well as in the epigastric and hypochondriac regions, with dullness over the rest of the abdominal area; palpation disclosed the mass to have its origin in the hypogastric region and to be spheroidal in shape, well filling the abdomen. It was very elastic to the touch and marked fluctuation was elicited, and at several points its wall gave me the impression of being somewhat thinned. Three distinct tuberosities upon its surface could be fairly well outlined as well as a larger mass in the right hypochondriac region, but whose relationship could not be made out owing to the tension of the abdominal wall. Vaginal examination revealed the cervix softened and crowded backward and to the left by a dense smooth mass, which with the cervix quite filled the true pelvis. A marked sulcus existed between it and the cervix, the extent of which I could not determine, as bimanual palpation could not be utilized to separate them. Digital examination per rectum revealed no additional information except to more distinctly outline the cervix and tumor; no measurements of the intra-uterine cavity was made, owing to the evidence of the existence of pregnancy, as indicated by the cessation of menstruation nearly three months previously and development of the areola and milk. I could not make out what I considered to be the pregnant uterus, but this I thought was owing to it being con-

cealed by the tumor. Auscultation and ballottment gave negative signs. The other organs seemed to be possessed of normal functions although there was some anasarca of the limbs. The existence of a rapidly-growing multilocular ovarian cyst and a broad ligament, or possibly a uterine myoma, associated with pregnancy about three months advanced seemed to me most probable after an analysis of the phenomena presented, and such was the diagnosis formulated and upon this I based the opinion that operative interference would ultimately be necessary:

1. Because if she was pregnant (as to which I entertained no doubt) it would in all probability be impossible for her to go to term, owing to the encroachment of the presumed tumor upon intra-abdominal area.

2. Even if it were possible for pregnancy to continue, the tumor in the pelvis would preclude the possibility of a delivery at full term, owing to the occlusion of the pelvic straits by the same; on the other hand, I believed that the presumed ovarian cyst and the myoma might be removed with good results and prospects of a termination of labor at full term.

I informed the husband and his wife of my opinion as to the conditions existing, as well as the treatment which it appeared to me was indicated, if any amelioration of her condition was secured. At the end of ten days she returned to enter the hospital, as she had steadily grown worse. The pain which she suffered had become markedly aggravated and prevented anything but snatches of sleep. Her appetite was much impaired, and some vomiting existed, the anasarca had become marked but what surprised me more than anything else was the rapid increase in size of the abdomen which in the ten days that had elapsed since my first seeing the patient had increased to a size nearly if not quite as large as observed at full term. Other symptoms present were those that I have already detailed, excepting that the presumed tumor seemed to have its walls much thinned by the rapid accumulation of fluid within, so that it appeared quite thin, particularly in places. I felt confirmed in my previous diagnosis. As the woman's condition was rapidly becoming precarious, it was decided to interfere in her behalf in the manner already pointed out. She was kept under observation for a period of five days, during which time she was being prepared for the operation by confinement to bed and such other preparation as is

usual for intra-abdominal work. December 5 she was anæsthetized by Dr. Murphy with ether, and assisted by Drs. Stidworthy and McEwen and in the presence of Dr. McWilliams I proceeded to carry out such operative measures as my conception of the case so far seemed to indicate, namely, the removal of the supposed ovarian



Fig 1. Fibroid Uterus with its contents.
a. Dilated Cervix Uteri.

tumor and myoma. The abdominal cavity was opened in the usual manner and the presumed tumor exposed to view. Here I received my first surprise, for it was now apparent to me that what I had considered to be an ovarian cyst was the uterus distended to a size which should be nearly normal to it at full term. With my previous

knowledge and evidence of the existence of pregnancy, I felt sure that I had made the grave mistake of cutting down upon the gravid uterus at nearly full term, when I had only expected to find pregnancy about three months advanced. Many of you may possibly form a faint conception of my chagrin and remorse at the thought of having committed such an error, and the grave responsibility which lay before me.

It now dawned upon me that the irregularities in the mass which I had felt, as well as the tumor in the pelvic cavity, which I had considered as possibly a broad ligament myoma, must be myomata of the uterus, and I proceeded to confirm this opinion. Introducing my hand into the abdominal cavity, I found this to be correct, for the uterus everywhere was studded with interstitial and subserous myomata, while a large pedunculated one was located in the right hypochondriac region under the liver to which it was slightly adherent, while the mass which I had felt in the pelvis proved to be a myoma developing from the cervical segment of the uterus and occluding the true pelvis. As this would preclude the delivery of the supposed foetus per *via naturalis*, I decided to do a Porro-Cæsarean or Porro-Mueller operation, but before doing this the question presented itself, as to whether the child was living or dead; if the latter, I would be spared any effort in its behalf. Careful palpation of the uterus failed to disclose the existence of any foetal structures within it. Ballotment gave indefinite signs and not such as would indicate the existence of a child at a viable age, as I was led to anticipate. One thing I now felt sure of, was the fact that the uterus did not contain a viable child. I therefore again changed my diagnosis, now thinking that I was dealing with a three- or four-months pregnancy associated with hydrops amnii. Under this belief I proceeded to do a hysterectomy, it being done in the usual manner familiar to you all, the stump being treated extra-peritonæally.

After the operation and when the woman was removed to her room I looked at the large mass of uterus studded with tumors lying upon the table, and I was, of course, curious to know its contents, so Dr. Williams and I proceeded to investigate. Inserting my finger into the portion of the cervix yet remaining attached to the uterus, I proceeded to dilate the same, when a bag of water presented which was ruptured and the amniotic fluid permitted to escape. I was uneasy fearing to see a viable child present itself for I

was beginning to doubt my senses, but this fear was soon dispelled as a three-months foetus presented, and when this was removed another one presented itself and was extracted and as the water ceased flowing a second bag of water presented which was ruptured and still another foetus was delivered. I was now beginning to won-



Fig. 2. Triplets from Fibroid Uterus.

der when there would be an end to coming foetuses, but as there is an end to all things earthly, so there was to this, as this was the last one, but not until it was delivered and the uterine cavity completely emptied was my diagnosis completed and my mind put at an ease. Dr. McWilliams counted over twelve tumors varying from one inch to five and one-half inches in diameter, with the existence of numerous smaller ones.

The tumor which occupied the true pelvis is now four inches in diameter, after being in alcohol for three months.

The woman made an excellent recovery, and is now enjoying perfect health. I have reported this case and detailed my errors with the hopes, *first*, that some member of the society may enlighten me as to how I might have avoided my errors in diagnosis, as I never desire to pass thirty-five minutes of such mental strain again; second, because it may be of some value in pointing out some of the complications one may meet with in obstetrical and surgical practice.

It may interest some of you who have not recently given the subject consideration, to know that medical literature, at least such as I have access to, is not as replete as one might wish, with facts bearing upon the treatment of uterine fibroids complicated with pregnancy. Thus Pozzi in his work on gynecology, published in 1892, records ten cases of simple myomectomies done upon uteri which were gravid from three to six months; of these three died and seven recovered, and in four of the seven recoveries did the pregnancy proceed to full term. He reports seventeen hysterectomies for fibroids complicating pregnancy; of these, twelve recovered and five died. In four of the cases have the observers—namely, Alex. Patterson of Scotland, R. Barnes of England, Freund of Germany, Bantock of England—recorded that the tumor concealed pregnancy, from which one may infer that pregnancy was not suspected. Hoffmeier states that in his case he suspected pregnancy. Whether the other cases were diagnosed as pregnant uteri prior to the operation is not stated.

Stavley (*New York Journal of Gynecology and Obstetrics*, June, 1894,) tabulates thirty-three cases of this character; seventeen of these cases were reported since 1889. Reports of a number of cases have found their way into medical literature during the current year, but my limited time prevents my further reference to them.

I think the case in a sense unique, illustrating as it does what is in all probability one of the rarest of complications of fibroids of the uterus, namely, triple pregnancy, and I much question if it has its counterpart, for it would be remarkable if, out of the limited number of cases which have thus far been operated upon for uterine fibroids complicated by pregnancy, triplets existed, as this condition is estimated to occur only about once in every 6000 births.

SOME MORAL AND SCIENTIFIC ASPECTS OF ABORTION.*

BY J. A. HORIGAN, M.D.,

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I am led to make this appeal in behalf of that vast number of human beings, who, in the future, are to be conceived and are destined not to be born. From personal knowledge, testimony of my fellows, and the confessions of the actors, we know that too many lives are lost through the channel of abortion. So frequent has the practice of criminal abortion become, that it is time for the medical profession to make a crusade against it, and no longer remain a mute witness to one of the lowest habits that is practised by the highly-civilized people of this generation.

In treating the subject, I shall do so from two points of view, namely: the moral, and the scientific. I shall endeavor to point out the evils to morals and health resulting, and suggest remedies for the treatment of each.

Let us first take up the moral side of the question and discuss it, for it is depraved morals that give physicians the most work in these cases. None of us dispute the fact that a large percentage of abortions occurring are criminal, because the parties to them wilfully and deliberately remove the foetus in utero with the knowledge that they not only break the laws of the State but of God.

That men and women live upon incomes earned by depriving others of life seems almost too heinous to believe, but it is true, and we have the evidence.

Take the advertisements in our daily papers, our illustrated magazines, and even our church papers (bulletins of moral doings), setting forth the qualities of "The Ladies' Friend," "Pennyroyal Pills," "Relief for Women," etc., etc. What do these advertisements mean in plain English? Just this: when a woman's catamenia stops from natural causes, the "Ladies' Friend" can be obtained to relieve her. Of what? Her offspring! a life within her own, and for which she

* Read before the Kansas City Academy of Medicine, February 20, 1897.

is responsible. All of these remedies can be obtained of druggists at \$1 a box, and are warranted to take one human life and possibly two. Then there is that infamous being, the professional abortionist, who is willing for a small consideration (\$25 more or less) to despatch a human being while you wait.

There are two varieties: That Janus-faced, fawning, sycophantic fashionable doctor, who is always prominent in church and social circles; whom honest people take to be a conscientious, moral man. He is a veritable wolf in sheep's clothing, who, having entree in the sacred inner circles of the family home, is willing to prostitute a noble profession to the baser passions of fallen humanity.

The other does not claim to be anything more than an assassin, and has always two things in view; one is to make money, and the other, to keep out of the clutches of the law.

There is a nest of these cut-throats in one of our large office buildings, and I understand that the old bird of the flock was formerly a theologian, and travels on his reputation among church people.

This is how they do it: a lady goes into their office and says, "Dr. —, I have gone over my time about two weeks, and I think I have taken cold and would like to get something for it." The doctor replies, "Just get up on the operating chair and let me examine you." "Now, Madam," continues the doctor, "medicine will do you no good, so I will introduce an instrument that will be effectual." He then introduces an instrument into the uterus and twists it around, causing the lady much pain and loss of blood. Oh! yes, the lady is relieved, the "cold" disappears among the blood clots. In reality, another innocent creature has come into the world and passed out of it without ever seeing the light of day. These are but the means of accomplishing the end.

But why do people want to do such a thing? Because it is not fashionable nowadays to have large families, and society claims the time and attention of those who should devote it to the home and family.

I often wonder why people marry to reverse nature's intention when they know that wedlock was instituted in order to perpetuate the race, and the gratification of human passion is but supplemental. Others say, "Children are such a care. I can not be bothered with them: they require so much of my time; they are so expensive; I

can't afford to have them. Having children wrecks one's health so." For these benighted beings I have the utmost pity. How do they know all these things, when they have never had the experience.

True, children are a care, but with proper training, the responsibilities blend into a labor of love. Only those who possess these treasures can appreciate them and would not be without them. The expense of rearing a family is not what some would have us believe. We might have to forego a trip to the seashore in summer, or the theater every week, or the parents might not wear raiment of seal-skin and silk, and indulge in champagne suppers. But on the average income, with the funds properly applied, the children can be fed, clothed, and educated. We see this done every day by those about us.

The very people who talk most of the trouble, expense, and annoyance of the children, spend a great deal of their time in caring for "Fido" or "Pretty Poll"—playthings suitable for maiden ladies who have passed the meridian of life. For married women they were never intended. It is a "sight for gods and men" to see a couple at the tea-table with a dog sitting in a high chair between them, and a howling parrot on a perch nearby, demanding a cracker. Look at this home and then at another, where a number of bright-faced, well-behaved children are lined up at the table with father and mother. Then you realize what the dignity and happiness of home is. Further comparison is unnecessary, the contrast is too great.

Our parents and grandparents reared large families on incomes less than ours, and I am sure they did so successfully. Certainly, their ideas on this question differed from those of the present day, or some of us would not be in existence. There is no foundation for the theory that women who bear many children have poor health. Reverse this and we have the truth. Nature never imposes burdens that can not be borne. If we look about us and compare the mothers of large families to other women, all things else being equal, the mothers will outrank the others in health, physical development, beauty, and character. And why? Because the mother carries out nature's laws and the other women do not.

Continual interference with the normal functions of reproduction will weaken the entire body. Lines will not only appear upon the face, but the mind will also bear marks of suffering. Some say the

ordeal of labor is too terrible to bear. To them let me say, that the compensation derived from the companionship of their children will more than repay them for the temporary suffering. Ask any mother whose infant is a month old if she suffered much at the birth of her baby, and she will answer you, "Really, I have forgotten."

I have never been able to differentiate between the character of the premature and full-term pain, except in the few last expulsive, or bearing-down pains; and these can be greatly modified by the judicious use of anæsthetics. Again, in abortions the pain caused by the delivery of secundines with the fingers, hands, and even instruments, causes as much, if not more, suffering than a normal full-term labor.

Boarding-houses are high schools of criminal abortion. I would advise any young man who marries and wishes his wife to retain innocence and character to steer clear of them and go to housekeeping. The ladies have little or nothing to occupy their time, so they assemble and converse about everything else but what they ought to talk about.

It has been my experience—and inquiry among other physicians corroborates it—that the greatest number of criminal abortions occur in these houses and the women who live in them teach this crime as a specialty.

These houses indirectly encourage it, for they will not take persons with children. So far is this feeling that children are a burden carried, that only a short time ago a lady living in our city, at a Women's Christian Home, who was the only protector of a beautiful little orphan girl, three years old, was informed that she must seek quarters elsewhere, as they could not be bothered with children. And this, notwithstanding the fact that it rendered the child and its aunt shelterless; and yet our Lord said, "Suffer little children to come unto me and forbid them not, for of such is the Kingdom of Heaven." It is fortunate He has provided a home in the Kingdom of Heaven for them, since so many are deprived of such on earth, by so-called Christians.

Society—the 400 I mean—is but a hollow mockery. It is a hotbed where foeticide is propagated, nursed, and flourishes.

At social gatherings of to-day, where women alone are present, these matters are so openly and lightly discussed that our grandmothers, were they able to return to earth and be present, would

think they had surely made mistakes and gotten into houses to be avoided.

At a social gathering recently, an "old hag" who had schooled other women in the art of nipping nature in the bud, approached a lady, the wife of a physician, and said, "It's too bad you are that way again. Your husband's a doctor, why doesn't he relieve you of it?" She was answered quick and hard, "My husband would not take the life of any helpless little one, and you suggest that he murder his own child."

Another "society lady," married, came to my office one day and said, "Doctor, I have children enough (she had four), and I need your assistance, it is so indecent to always be in the family way." I could not assist her, and she found "relief" elsewhere. What an idea of decency! I do not think it coincides with her mother's, who had a large family.

Among all classes of people this habit exists. From the above-mentioned society individual, down to her washerwoman, they all have their excuses for the crime but none of them are reasonable.

The mothers are the most guilty, for they are God's chosen protectors for their little ones, so much so that He has incorporated the offspring into their own bodies, that they might be better cared for. He did not ordain that they should be brought into the world through an incubator, like little chickens. He selected woman and made her naturally tender and fostering.

Women instinctively desire to be mothers, not of one or two children, which seems a limit for some people, but of a number. How they can deviate from that sublime function, maternity, and wade through blood to do so, is more than I can understand. A drunken woman is a deplorable creature, but to my way of thinking she is a queen compared to the auto-abortionist. The next in criminality are the fathers, as all physicians know. The very lives they aid in destroying are the results of their lust. Men are endowed with reason and judgment to a greater degree than women, and should use their faculties in marital duties, as well as in business affairs. There is not a man under the sun who would make a business contract and not carry out his part of it and see that the other party did the same. Every day men make contracts of marriage and swear to them, at the same time perjuring themselves, in supporting legalized prostitution. If some men love their wives as they claim they do,

certainly they would use their influence to prevent them committing a crime that carries with it death and destruction. A man can not love a woman and consent to have her run the risk of losing her life in a criminal operation or of destroying her health. A man certainly can not respect a woman that he sees deliberately take a human life. I am satisfied if he were a total stranger to her and knew that she was about to pierce the heart of the infant in her arms with a darning needle, he would not only advise her not to do so, but would restrain her. Men of reason know that life enters the body at the moment of conception, and to destroy this helpless being is worse than murder, and they should prevent it when it is in their power to do so.

The problem now is, how are we going to stop this practice? As a society, we should see that laws are enforced, and if the present ones are not effective, do as our illustrious Ex-President, Cleveland, advises, take a hand in making new ones.

We should ask the press, through our Secretary, not to publish advertisements of certain nostrums and men. We should in the same way advise pulpit orators to preach upon this subject once in a while and give Hell a rest. Some of them do not think there is such a place, but in case there is, it is their duty to warn their congregations to keep far away from this path, which, above all others, leads there. Our State Board of Health, whose duty it is to look after these matters, has caused some excellent reforms in the past year in our system of medical education. Let us urge upon them to give this crime their attention. They can get hold of criminals who use the profession as a cloak, if they go about the matter properly. By advice, backed up by facts at our command, show these people the grave crime they are committing by taking human life. I have pictures of the developing ovum, from the beginning of conception, which I show them. I find the comparison of a picture to what really exists in a woman's womb will make them back down in their purpose quicker than any other argument. You can not always succeed at once, and oftentimes not at all, but with patience, without compensation, give a little time to save life. If you are busy, tell them to come to-morrow. How many of us, no matter how busy, would not stop to rescue a babe from drowning? And why not, if it comes our way; can we not spare time to save a little one from being murdered in its mother's womb? During the

years of 1895 and 1896 I have persuaded seven women not to commit this crime. I have heard good physicians say we should not attend women in abortion who have brought it about criminally. I agree that we should refuse if they come to engage us beforehand. But if we are called and find a woman aborting, we should do all in our power to help her to regain her health, and only then when she agrees to allow us to manage her case as we see fit, which should be to give the foetus every possible chance of living.

So-called justifiable or therapeutic abortion is recognized by the profession as right and proper, in order to save the life of the mother when afflicted with certain diseases.

Lusk says, "The morality of this general proposition is unquestioned." In the very next sentence he acknowledges his inability to determine when abortion is a correct procedure. He says, "It is not, however, easy by any means to determine, in a specified case, whether the requisite conditions which render the induction of an abortion a duty, really exists." It is a very easy matter to say, in a general way, "it's all right," but saying this does not make it so. The foetus has rights that must not be overlooked. No doubt if it were in a position to speak for itself, it would ask, "Are you sure you can keep my mother alive by killing me?"

We would be compelled to reply that the mystery of life was not in our keeping. Therefore, if life be not in our hands, are we not trespassing on the rights of some one else if we take one life even to save another? As I look at it there never existed any plausible excuse for the operation. Nature itself takes care of this when such conditions arise that the mother is no longer able to carry the foetus. In diseases where the blood of the mother is charged with toxines, nature fills the foetus full of the same. We know that oxygen being withheld from the foetus it dies, and that the blood of the mother is filled with carbon-dioxide, which acts as a uterine stimulant. This, with the dead foetus (a foreign body), which also acts as a stimulant to the uterus, causes it to contract and expel spontaneously its contents. In organic diseases of the kidney, heart, lungs, etc., I acknowledge that pregnancy aggravates them temporarily, but it will not help the mother permanently to empty the womb. The best that can be done is to relieve a few distressing symptoms, for in these diseases death awaits the mother just the same. We are more liable to hasten her end if we induce abortion and shock the

nervous system. These organic diseases do not affect the foetus always, and they are delivered and become healthy members of the community.

Deformities, tumors, incarcerations of prolapsed or retroflexed uteri, etc., are very poor arguments for producing abortion. Laparotomy and Cæsarean section, with their modern improvements, will give both mother and child an equal chance for life.

It is false sentiment that says, "destroy the child and save the mother." Grant that the mother lives a week, a month, or a year, the chances are that the child will live longer than that and fifty times longer. Again, it is by the mother's volition that the child lives, but she has no right to destroy it while in the womb or out of it. Who would give a starving mother the right to kill her child and eat it in order to preserve her own life for a day or a year? Let us bury with the past this unscientific operation that we in our ignorance invented to save life by destroying it.

There are a few things for which many embryotic existences are terminated, that I wish especially to bring to your notice.

The oculist will tell you to do an abortion for certain conditions of the eye, "for if you don't the mother will go blind, or she will die of uræmic convulsions;" the gynæcologist will say, "Ah! an impaction; impossible to move it; clean out the womb;" the obstetrician says, "This is a deformed pelvis; she never can bring it; an abortion is the best way out of it;" the general practitioner will discover a case of "obstinate vomiting," and decides that abortion is the only hope for the mother.

The eye symptoms are produced by diseased kidneys and not by the pregnancy; it is only a coincidence that the two are together. Let us then treat the kidneys and let the uterus alone. Obstinate vomiting occurs in two classes of cases, as a rule: the woman who is pregnant for the first time, or the woman who has been taking tansy tea or oil of pennyroyal to bring on her menses. In the latter, we must treat the stomach and intestines; they are the seat of the trouble and not the womb. Disposing of its contents will do no good. The first class we must treat surgically; operate outside of the uterus, but do not go any further in than the internal os. Copeman has demonstrated the efficiency of cervical dilatation in this symptom. I believe we can go further and do laparotomy, breaking up adhesions of the uterine annexia. It is the pulling of ad-

hesions upon uterus, ovaries, and nerves, that causes reflex vomiting. If it is an aggravated case, we can, in addition to breaking up the adhesions, sever the nerves themselves.

The first step in the management of threatened abortion is to require absolute rest. Any muscular effort on the part of the woman may cause trouble. Do not be in too big a hurry to make a digital examination; it is not a harmless procedure as many suppose. Wait for the severer symptoms to develop, no matter how many old women are there to criticize you for not pulling off your coat and rushing in "where angels fear to tread." Let violent rhythmic pains and severe hæmorrhage be your guide at this trying time. Follow the laws of cleanliness and see that all about the patient is kept clean.

The next step is to stop uterine contractions and to control hæmorrhage. We can accomplish the former by paralyzing the sympathetic nerve with opium, and the latter with internal hæmostatics. The opium serves both purposes admirably, and with the addition of plumbi sub-acetatis, acidum gallicum, acidum sulphuricum aromaticum, or other drugs, ergot excepted, that contract the lumen of the blood-vessels or favor clotting. I prefer to give each drug separately and not in combination, in order that I may be able to meet the indications more readily. The diet should be modified, in order that the alimentary canal may not be filled up with irritating and unnecessary stuff. It is argued that all this can be accomplished if we see the case soon enough, before dilatation of the os and rupture of the bag of water. But after dilatation takes place and after the rupture of the membranes it is too late, and even though the foetus may be alive, we should empty the uterus immediately. To my mind this is a serious error. Let us pause and think what takes place in the structure and functions of the organs and tissues we are dealing with.

In the first place, when the membranes rupture and the amniotic fluid escapes, there is a diminution in the size of the cavity of the uterus; if the tear in the membranes be not in the center of the internal os, which is very small until the end of gestation, the internal wall of the uterus will act as a plug, preventing the entire escape of the fluid. This high injury to the membranes exists often in criminal abortions where foreign bodies are introduced into the pregnant uterus and slide along the elastic membranes before pene-

trating them. It will be said that this may be true, but the fluid will continue to escape through the rent in the sac. This does happen until nature repairs the damage done.

Let us now see how this takes place: The same as in any other internal wound; the same as any wound of the other serous cavities; peritonæal, pleural, chambers of the eye, etc. We know that union, if not primary, will secondarily take place in all of the above-mentioned cavities and that the fluids there contained escape at the time of injury and continue to seep out until nature has rebuilt the wall. When the membranes are severed, the vessels and lymphatics which nourish them are also broken and the ever-ready plastic cement, lymph, is freely thrown out to begin its work of healing, that positively and surely ends in repair. The inner wall of this sac is in structure similar to other serous cavities throughout the body and, in fact, is derived from the ectoderm or epiblast. It is the outgrowth of the serous membrane making cells of the egg, and partakes of their function. When the fluid escapes and the sac collapses, the lymph is thrown out; the uterine pressure being removed (by opium), the walls of the amnion coaptate and unite. A proof that union takes place in the torn amnion is established in the fact that adhesions are often found between the amnion and the foetus itself.

Dropsy of the amnion is another proof. We all agree that one cause of this accumulation of fluid is due to an inflammatory process of the membrane. Now, any organ or tissue that can furnish the material required to produce an inflammation has, therein, all that is needed for repairing its injuries. It is by comparison that we are able to determine the value of anything, even a theory. Let us then compare the amniotic sac to a hydrocele of the tunica vaginalis testis.

We all know that if the sac of the hydrocele is punctured, an inflammatory process is started that ends in the healing of the severed membrane, and cells of the wall will secrete new fluid.

The same is true of a severed amniotic membrane; it is the collapsed serous surface that will unite before the adjacent tissues and pave the way for their union later on.

Now to prevent the uterus from squeezing the life out of the foetus, paralyze it with opium, so that it can not contract, and instead of the powerful muscular organ you have an inert bladder.

The laws of cleanliness and asepsis should be strictly observed.

Under no consideration should air be allowed to enter the vagina. Lubricants for the fingers should be discarded, unless the operator knows they are sterile. Rancid lard and vaseline are always to be obtained, and undoubtedly cause sepsis in many cases. The wet fingers, aided by the vaginal discharges, are sufficient to allow a careful and painless examination.

Learning from the examination the true state of affairs, and having decided one of two things, the life or death of the foetus, we are to proceed accordingly. If we determine that the foetus is alive, we should do all in our power to save it by continuing the pregnancy. If we are satisfied beyond a reasonable doubt that the foetus is dead, then we should empty the uterus.

I grant that it is not always easy to make a diagnosis of foetal death, but in a few days after it occurs it is more easily determined. Uterine pains begin, there is a characteristic discharge, and odor that is unmistakable. There is often escape of gas from the vagina due to putrefaction.

In a case that recently came under my observation, a lady six months pregnant in whom death of the foetus had occurred, there was a positive distention of the womb with gas.

I could feel the gurgling, and upon auscultation, succussion was marked. There was but little discharge, but of the peculiar kind. Upon introducing the finger into the os uteri, the bulging membranes gave way, liberating gas and fluid that smelled of the tomb. Four hours later the macerated foetus and the degenerated placenta came away. There is tenderness over the womb, which is often flabby between pains.

The color of the discharge is a mixture of muddy purple, green, and yellow, and is probably due to the decomposition of the hæmoglobin. Later it is mixed with shreds of membranes and placental tissue; the odor is like a mixture of the normal amniotic fluid and a hospital morgue after being shut up all night; the latter predominating. The temperature rises, the woman complains of malaise, which dates back to about the time the foetus died. Another evidence that the foetus no longer lives, is the change in the breasts. The patient will tell you that lately the breasts have been larger, that they have been unusually painful; that there is milk in them. This can be verified upon examination, and they will be found to be enlarged, tender to touch and even secreting.

The reason for this is the nourishment which nature intended to be applied to the development of the ovum being no longer required and suddenly rejected by the womb, finds an outlet from the mother through her breasts, as in the normal termination of pregnancy.

I believe that death of the fœtus more frequently occurs from hæmorrhage of the placenta than any other cause. That "bugaboo," blood-poison, as far as the mother is concerned, does not play the important part that is attributed to it.

In all the cases I have seen, only one mother has died from septicæmia. There were two factors that entered into the case that aided the infection. The first, was the long standing (six weeks) after the abortion, before consulting me. Allowing the secundines to remain and become infected.

The next was a second operation (curetting) done by the consulting surgeon who was not satisfied that I had done my work thoroughly. The gentleman, in his efforts to prove this, gouged off, with a sharp curette, strips of the healthy tissue. Following this the patient had a violent chill and never recovered from the shock.

There seems to be a tendency, from the fear of blood-poisoning, to clean out the uterus regardless of the condition of the fœtus. I think it wrong not to give the latter a chance for existence.

Septicæmia occurs where the walls of the uterus are injured by instruments, rather than from any septic condition of the ovum, which seems to be a prevalent idea. Upon the slightest provocation, this gives unprincipled persons an excuse for performing criminal abortion. I cite the following case for example:

A Catholic gentleman married a lady of no particular faith, and their ideas concerning abortion did not agree. Twelve weeks after their marriage, I was called upon to attend the lady, whom I found in bed, suffering with periodical pains and slight flow of blood. She acknowledged she was having a miscarriage and was glad of it, as it was too soon after marriage to be having a "big stomach." There was time enough in the future to have babies and she was going to "enjoy life." I examined her and found no dilatation of the os. I concluded from the condition of affairs that she had attempted a criminal abortion. I had a talk with her husband and he told me to stop it if it was in my power. In twenty-four hours she was free from pain, and in three days the flow had ceased. In ten days I

told them it was not necessary for me to call again, that she was all right, and that she must remain in bed a week longer in order to insure a perfect recovery. A few days later I met her husband and to my dismay he informed me, that after my departure there was a return of the symptoms and his wife would not consent to have me return, but sent for Dr. ——. He said that death would result from blood-poison, and in order to save her an operation must be done immediately and, calling a consultant, she was "relieved." The reputation of the physician who did the operation is such that he would not be admitted to membership in the Academy.

The woman who has attempted the life of the child in her womb has by the very act placed her own life in jeopardy from septic infection, and as long as the foetus lives, we, as physicians, are bound to save both, even at the risk of losing the mother. Who knows but the foetal life is the more valuable of the two: it may become a very useful member of society. Possibly it may be a detriment, but it can not be any worse than its mother.

To return to blood-poison: In these days of antiseptics fear in this direction is needless. We should treat abortions as we would surgical cases. Be clean, and seal up, with sterile dressing, the vulva as you would an open wound. Where there is a history of leucorrhœa, or any other reason to fear infection, I introduce into the vagina powdered boracic acid or borax. They are non-irritating and prevent putrefaction. Irritating and poisonous antiseptics should be avoided as long as the foetus lives. We must keep our wits about us in treating these cases, as the least thing may cause what we wish to prevent.

I will call attention to an error in treatment that came under my observation not long since. A lady was three months pregnant and consulted her physician for "bearing-down" pains, with passage of clots. He examined her and found a flexed uterus, that was impacted in the bony pelvis. He relieved the impaction, but in order to prevent it getting back he tamponed the vagina, completely filling it with absorbent cotton. If this precaution had not been taken, the case would have been treated properly, but the irritating effects of the tampon soon increased the trouble. With the removal of the tampon and proper treatment otherwise, she went the full period of nine months. When abortion is inevitable, as so many of them are, there is one thing more we must do for the foetus.

All Christian denominations, with few exceptions, believe in the necessity of baptism, and require physicians, in emergencies, to administer it. Teachers of obstetrics, as a rule, tell us how to act when called upon to officiate. In the enumeration of emergencies I fail to find anything about administering this rite of the Church to the undeveloped foetus. As scientists and moralists, we believe that the soul takes its place in the body at conception. Therefore, the embryo, no matter how small, is as much in need of regeneration as the conventional "ten-pound boy." Then let us give these wee ones a chance for eternal life, if it is not in our power to prolong their earthly existence.

In the past two years, my experience with this class of cases has been as follows:

Number of women who applied for abortion.....	21
" who went elsewhere and had it done.....	5
" " were persuaded not to do it.....	7
" whose history I never learned.....	9
Number in the act of aborting.....	25
" ending as threatened abortion.....	14
" " in complete " 	11
" of these criminal.....	11

Of the threatened abortion, two of them were criminal and instruments were introduced into the uterus by supposedly reputable physicians of this city.

I have gathered some statistics from some of my colleagues that are interesting, and by figuring a bit, we can approximate the number of abortions taking place in a given time and territory.

These figures are reliable—I obtained them from ten general practitioners, who met with them in the past two years. It is the lowest estimate that can be placed upon the frequency of the crime. If those who commit criminal abortion could be induced to tell the number of lives they destroy annually, my figures could be multiplied indefinitely.

One gentleman tells me that he is called upon as often to treat abortions as he is to attend to full-term labors.

I could not find, on the records of the Health Department of Kansas City, any information showing the frequency of abortions; but I did find during the years of 1895 and 1896 that there were 4810 children born in this city. Were there 4810 abortions treated

in Kansas City in the same period of time? Let us see. Polk's *Medical and Surgical Register* of 1896, gives the number of physicians living in Kansas City at 330; multiply this by eight, the average I have obtained from the ten physicians, which gives 2640 criminal abortions for the years of 1895 and 1896, occurring in Kansas City. The other 2170 required to make the total equal to the number of births are to be attributed to other causes.

In St. Louis there are 1250 physicians; add them to Kansas City's 330, multiply by eight, and we get 12640 criminal abortions for the last two years, in the two largest cities of the State.

It will be seen from the above that the persecuted Armenians and tyrannized Cubans were not the only human beings who were murdered during the past two years.

Here in the State of Missouri are killed, without provocation, innocent and defenseless babes to the number of 6320 per annum. It is not done by invading armies, or foreign foes, but by a supposedly Christian people, the fathers and mothers of the victims, their own flesh and blood.

In concluding, I would say, that I could have incorporated an endless chain of facts into this article culled from literature upon this subject, but this paper is only to add, in a feeble way, to what has already been written and to bring to your notice some moral and scientific aspects of abortion.

I append histories, in detail, of several cases of threatened abortion, where the amniotic fluid escaped and the pregnancies continued.

Case I. Mrs. N., age twenty-five, first pregnancy at three months, was walking on the street, and in passing where two young men were throwing a base-ball, she came near being hit by a wild throw. In her efforts to escape she stepped off the curb and fell in the street. Pains began and increased in violence as she walked to her home, three blocks away. When she got home and sat down she had a severe pain and felt a gush of fluid from her vagina. I saw her within five minutes after. Upon examining the discharge upon her clothing, it had every appearance of the amniotic fluid, streaked with blood. I put her to bed, examined her, and found the vagina moistened with the same and a few small clots; the os was not dilated and the pains were not so hard. I believed, from what I had read, that she was sure to miscarry, but judging from

the condition of the os, I determined to try to prevent it. After two weeks of complete rest, the pregnancy continued to the seventh month, when she was delivered of a living and viable infant.

Case II. Mrs. H., third pregnancy, fourth month, slipped and fell down-stairs, sitting down very hard on each step. She got up and went about her work, and while so engaged was taken with pains and flooding. She was put to bed with the usual treatment, seemed to get along nicely until the fourth day, when by her efforts to change her position in the bed she broke the waters and started the pains again. When I saw her one hour after, the discharge had nearly dried on the napkin she had taken off and saved, but there was enough of the odor to it to convince me that it was amniotic fluid. I examined her, and found the vagina full of clots; the os was large enough to admit the tip of my finger. A clot was plugging up the os, which I broke off and extricated with others in the vagina. I pushed the opium, gr. ss. every three hours, until she was fully narcotized. She had no more pains, but several clots passed the following day, after which a greasy, bloody discharge kept up for two weeks, growing less every day. From that on there was no further trouble, and she was delivered at full term of a healthy infant.

Case III. Mrs. A., seventh pregnancy, at sixth month. Did a hard day's washing, was taken with pains, waters broke, she went to bed and sent for me. I examined and found the night-dress wet with amniotic fluid. No blood or clots. Upon introducing my fingers, I found the cervix hard and the os patulous, but could not find an opening in the membranes which were protending and flabby. With the pains, the fluid could be felt trickling beside the finger. At 11 P. M. I gave her a hypodermic injection of $\frac{1}{4}$ gr. of morphine and waited. The pains ceased at 1 A. M. I then gave her fifteen drops of the deodorized tincture of opium every three or four hours if pains returned. After resting in bed for ten days, she got up and went to full term. A secondary bag of waters formed and the foetus was delivered alive.

Case IV. Mrs. H., eleventh week and eighth pregnancy. Was frightened by a cow a few days before Christmas, and she dressed a tree December 24. On the twenty-fifth her servant left her and she had to do the housework. December 26, while putting coal on the fire the water broke and she began to flow. She was given twenty

drops of deod. tincture of opium and put to bed. She remained in bed until January 3, when, all discharge having ceased, she was allowed to get up. I thought the pregnancy was going to continue, but on January 12 pains returned, and with them the characteristic discharge, showing that contents of the womb were degenerating, and nature was trying to get rid of it. On January 12, at 10 A. M., she was delivered with the assistance of Dr. J. H. Austin. One part of the membranes showed the point of previous rupture and subsequent attempts at repairs, but owing to degeneration of the placenta death of the ovum occurred and stopped the process.

NOTES ON SOME OF THE SYMPTOMS OF THE MENOPAUSE.*

BY G. H. MALLETT, M.D., NEW YORK.

From time immemorial it has been the custom for the laity and the majority of physicians to attribute all coincidental illness occurring during the menopause to the change of life. In no class of cases is this popular error so distressing or so fatal as in those where hæmorrhage has occurred with increasing severity or frequency, or an almost constant sero-aqueous discharge has appeared and the patient or her physician then distrusts the unwarranted assurance that "all will come right after the change." An examination is made, and it is then found that a malignant growth has progressed too far to warrant any radical operative procedure. Nothing in medicine is so pitiable or distressing to witness as the shock and prostration of these patients when they learn their condition. Yet in almost every case of carcinoma observed in patients between forty and fifty years of age, the early symptoms have failed to be recognized, and have been attributed to signs of the menopause. Winter, of Berlin, estimates that of the cases of carcinoma that present themselves at his clinic, only 25 per cent. are operable—that is, suitable for radical operations.

Making due allowance for differences in opinion as to what cases are operable, 25 per cent. is a much larger proportion than is found in the clinics of this country. My experience at the clinic of the Woman's Hospital and at the Vanderbilt, has shown that less than

* Read before the Woman's Hospital Society, June 8, 1897.

10 per cent. of the carcinomatous cases have any chance of benefit from a radical operation. These patients, almost without any exception, had consulted a physician, and all had told some friend of their symptoms, and yet there was not one but who had been told that her symptoms were those of the change of life.

This shows the lack of knowledge and the vague idea that the medical profession at large and the laity have as to what may occur during the menopause, and it has seemed to me that any contribution that serves to impress upon the profession the importance of distinguishing the symptoms of the normal change of life from those that indicate a local pathological condition, must be of some value; and with this hope these fragmentary notes are submitted.

Napier applies the term "climacteric" to "a well-defined period of life in woman, which is characterized anatomically by a series of processes of atrophic involution in the genital organs; physiologically, not only by the arrest of procreative adaptability (except in very rare instances), but also by the abolition of the periodicity in the activity of all the functions of the female system; pathologically, by a series of nutritive and vasomotor disorders exhibited in the field of general pathology; and shown in that of sexual pathology by a number of maladies connected with the atrophic processes proper to that age and also in all probability by a predisposition to the development of malignant disease."

The term "menopause" should include that period during which the menstrual functions become irregular, until it finally ceases. This usually occurs between the fortieth and fiftieth year. Dr. Bloom, of Philadelphia, as a result of his study, has placed the average age for American women at between forty-three and forty-four years. Cases of premature menopause I have not found to be of very rare occurrence. Formerly, cases of late menopause were frequently quoted; but recent knowledge of gynecology has enabled us to find local causes for the great majority of these cases.

For obvious reasons, it is difficult to know what is a normal menopause. The usual course seems to be for a woman to miss a period or two, then have a regular menstruation, then see no flow for a longer interval, the quantity becoming less in amount at each period, the intervals becoming longer, and the blood diminishes until in two or three years the periods cease.

This course of events is accompanied by nervous phenomena;

sometimes sudden sensations of heat and cold, or flushing of the face. These symptoms may cause little inconvenience, and disappear when menstruation ceases. The above may be called a normal menopause, but it is an unusual one. Any of the symptoms that might be called physiological may be exaggerated into a pathological condition, and it may be difficult to tell where the one ceases and the other begins. Many authors claim that preëxisting abnormal conditions are made more pronounced during the menopause. This, I think, is apt to be exaggerated.

I shall not even attempt to enumerate the many disorders of the nervous, circulatory, or digestive systems, skin eruptions, etc., that occur during the menopause, but confine my observations to those symptoms that are of the greatest importance. These are hæmorrhage and leucorrhœal discharge. In many cases there is a leucorrhœal discharge which in some causes vaginitis and pruritus.

It is a popular belief that the monthly period may be more profuse and continue for several days longer than formerly, and may even appear between times, and that leucorrhœa at this time is of no importance, and that all will be well when the change of life is completed. This we know is often a fatal error.

The rule should be that in every case where a woman during the menopause loses an unusual quantity of blood, a local examination should be made, and with rare exceptions the cause will be found.

In order to determine what is the normal amount, a careful study of the previous history of each individual case should be made. Over six days of a free flow should awaken suspicion, and, if repeated, should demand an examination—as should a flow that recurs in twenty-one days, when the interval was formerly longer. If this is due to vascular congestion, caused by cirrhotic liver, cardiac or renal disease, or those constitutional conditions that are supposed to encourage bleeding (malaria, syphilis, etc.), then these facts should be established. In my experience hæmorrhage from these causes is exceedingly rare.

Menorrhagia is quite frequently met with. Metrorrhagia is a most important symptom, and should always demand an examination when occurring during the menopause. One of the most important symptoms of the local pathological conditions, and one that should always demand an examination, is that of a slight hæmorrhage following coition or the use of the vaginal syringe. I have

found this to be the first symptom observed in many cases of carcinoma. In one case of carcinoma of the body of the uterus upon which I operated, this was the only suspicious symptom observed. Upon the introduction of the curette the disease was found to be extensive. I removed the uterus, but the disease recurred within a year. Had the importance of the above symptoms been recognized earlier, the result might have been different. If the menopause continues, and the amount of blood lost does not diminish in three years, then the patient should be carefully examined.

While leucorrhœal discharges are of very frequent occurrence during the menopause, and in many women this discharge seems to take the place of the bloody flow—a profuse leucorrhœa should not be looked upon as physiological, until a local examination has shown that it is not dependent upon a local lesion; for this discharge may indicate an inflammation of the lining membrane of the uterus, which, neglected, may become something more serious. Discharges of a watery consistency should make one suspicious of carcinoma.

In those classes of cases where a local examination is indicated, namely: when a woman who, during her menstrual life, has flowed three or four days moderately, flows for six or seven days freely during the menopause; when the intervals between the periods become shorter; when a flow occurs between the periods; when a slight hæmorrhage follows coition; and when the irregularity of menstruation continues over three years. A local lesion in the large majority of cases will be found. This may be a malignant growth, most frequently a carcinoma, a fibroid, a polyp, a retroversion, an endometritis, or possibly an inflammation of the appendages.

In seeking local causes for the symptoms that occur during the menopause, the size of the uterus has been the most valuable guide to me. I can not recall a case where a small uterus has given trouble during the menopause.

The diagnosis and treatment of the local lesions that occur during the menopause do not come within the scope of this brief paper.

Before closing, I wish to mention very briefly those troublesome and distressing symptoms of the menopause dependent upon vasomotor disturbances. I mean the flushes and sensations of heats accompanied by irregularity of the heart and palpitation, fullness of the head, pricking sensations, etc. These symptoms I have found

more pronounced in those patients whose menopause has followed operative procedures. In the treatment of these cases after trials of the bromides, valerian, sombul, asafoetida, etc., I thought to wander in more recent therapeutical fields—I mean the administration of ovarian tissue. In the few cases the remedy was administered, with results almost similar to those recorded by Dr. Manzer, of Berlin, and by Dr. Stehman, of Chicago. These results I hope to report at a later date. One case was of such interest that I will relate it briefly: The patient was twenty-four years of age. Two years previous I had removed both ovaries and tubes for pyosalpinx. Menstruation ceased after the operation. One month after the operation she began to have hot flashes, which usually terminated in cold perspiration. She thinks that she had about twenty a day. They increased in frequency and severity during the first six months, then became less marked, and for a year she had but two or three a week. During the last two months the attacks have increased in frequency. She has periods of uneasiness and anxiety, some dizziness and loss of memory, numbness of hands and feet. The patient has gained flesh since the operation, and looks well.

In speaking of the treatment of her case, I told her of the benefits derived from the use of ovarian tissue, and mentioned the fact that menstruation had been known to recur after its use. She seemed greatly pleased at the prospect, and I appointed a day for her to return to get the medicine. I found it impossible to obtain the remedy on the appointed day, so, rather than disappoint her, I gave her a tablet composed of iron and sombul, and told her that it would probably have the same effect. One month later she returned and told me that she felt much better, had had but eleven flashes during the whole month, and her other symptoms had improved correspondingly. Since she seemed so much improved, I decided to continue with the sombul and iron treatment. One month later she reported that nearly all of the symptoms had disappeared, and that she had menstruated for three days. A local examination showed nothing abnormal in the uterus. In another month she informed me that she had menstruated again, having flowed four days, and now considered herself well. Since then, six months ago, I have lost sight of her. This case seems to indicate that suggestion is a prominent factor in the cure of some of these patients, as I had never obtained a similar result from the use of iron and sombul.

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EDITORIAL.

MEDICAL SUBSCRIBERS AND THE MEDICAL PRESS.

The "Power of the Press" is as trite a phrase as any in vogue in our times and its triteness lies in the universal recognition and acknowledgment that it is both a potential and an actual fact. In a general way we know also that it is the subscribers who make this potential power an actual fact. It is more difficult however to realize, and to bear it in mind, that subscribers are composed of units—individual subscribers—and that it is the personal coöperation of each of these which makes a periodical what it is and settles the question of its success or failure. If all this is true of the lay press, with far greater emphasis is it applicable to medical journalism. In no country in the world is the average medical man more dependent upon his medical journal than in this country—in many instances it is the only literature he ever reads—and yet we doubt if, in any other country of equal prominence in scientific advancement, the medical press is so little encouraged, its

effort at development so indifferently received and its potential power for good so little appreciated.

When we consider that this country supports more medical journals than any other—about two hundred and fifty—the above statement sounds at best paradoxical. But it is not even that; it is merely a plain truth. It is the fond belief of most medical subscribers, doubtless, that a respectable subscription list supports a medical journal and allows the fortunate proprietor to reap a satisfactory income as well. We were simple enough to hold this belief ourselves before we entered medical journalism. Unfortunately this is not the case. And why? Because the *majority*—we say it advisedly—of medical subscribers are willing to allow their subscriptions to run on two, three, four and even five years, without paying a penny for the support of their journal. Finally, in many cases, even after this interval, it is necessary to send collectors and dun them into paying the few dollars for which their subscription has rendered them liable. Is this encouragement of medical journalism? And what has been the result of this neglect on the part of the profession? That all journals of the better sort, until within a very few years, were owned by lay publishers and were published, as a side issue to their regular business, for the sole purpose of providing a medium for advertising their other and more profitable publications. It was not in the interests of the medical profession but purely in their own business interest that they conducted their medical journals and maintained them at a standard for many years much lower than that of any first-class medical journal in Europe. The majority of our medical journals, not owned by great lay publishing houses, unable to find support from their unpaid subscription lists, have been compelled to resort to dependence upon advertisements. Therefore we see many journals to-day with their scientific pages interlarded with all sorts of questionable advertisements and their editorial columns, which should be sacred to the best interests of our science, filled with an authorized laudation of drugs furnished by named manufacturers who, for the sake of these editorial “puffs,” pay for the printing and circulation of such journals. Their subscription list is but a medium for the advertisement of drug houses and instrument makers. Does not the fact that so large a number of inferior medical journals, so supported, exist in this country and find readers prove how indifferent the mass of the profession is to the dignity and

scientific development of the medical press? If the big journals, with an army of collectors in constant exercise, never expect to receive more than fifty per centum of the face value of their subscription list within the year of contract and depend upon other sources for the wherewithall to publish, is it astonishing that the smaller fry, without outside resources, are forced to resort to the undignified methods of avowedly "trade journals" to keep their heads above water? It is not fitting that medical journalism should be compelled to depend upon its advertisements for its pecuniary support. This support should come from its medical subscribers, for whose benefit such journals should be and are ostensibly published. If medical men would pay their journal bills promptly, instead of throwing them aside with the mental remark, "Oh! that can wait," the effect would very quickly be seen in a rapid disappearance of the medical journal in the pay of drug houses and a remarkable and constant increase in the quality of medical literature which first-class medical journals would offer their readers.

We ourselves have, perhaps, less reason to complain of the remissness of our subscribers than other journals of our class, for our subscribers have treated us at least as well and rather better than our knowledge would lead us to believe was the case with many other first-class journals. Yet it is for this very reason that we feel we can afford to write so plainly upon a subject which has far less of a personal application than one of universal interest, which affects not only ourselves but the whole medical press of this country and every medical man.

Why is it that the United States does not contain one great medical journal? and that there exist comparatively few which from the point of view of size, quality of scientific matter, breadth of treatment of subjects and literary ability can even be classed as excellent? Taking the *British Medical Journal* and the *London Lancet* as a type of great journals, is there a journal in this country worthy to be mentioned in the same breath with either of those? Is it not because the medical public in this country is satisfied with inferiority and does not support by prompt payments even what it has, that we have no journal worthy to rank with the *Lancet*?

But, having thus taken the subscribing public to task and telling it these plain truths, we must do it the justice to acknowledge that the present unworthy condition of things was not originally of

its making; nor do we believe that, having once had the facts placed clearly before it, it will hesitate to see where both its duty and its interests lie.

It was the misfortune of the profession that medical journalism was first taken up and inaugurated in this country by lay publishers who saw in it the easiest and most profitable method of advertising their medical books. It was not their expectation to make medical journals pay directly but indirectly by advertising their wares. Therefore, until within hardly more than a half decade, medical journalism has been subservient to trade interests and its development depended, practically altogether, upon the fact whether one publishing house was affected by the rivalry of another and felt the need of increasing its advertising facilities. That our medical press has been as respectable as it has been in the past is solely due to the strength of character of individual editors who have succeeded in persuading their respective employers that it was to the latter's interests to give such a *quid pro quo*. Having a large capital to work on, desiring only to bring their journals to the notice of as many possible purchasers of their books as might be and realizing the necessity of a large subscription list as a bait for the outside advertiser and, finally, with the object of discouraging any independent attempt in this direction of professional men who, not being engaged in the publishing business might be expected to enter journalism with an ambition for its highest development for its own sake,—a sentiment not in accord with trade interests,—medical publishers established the precedent of long credit—almost as long, indeed, as a subscriber would permit his name to remain on their books—and thus succeeded practically in barring out all attempts at medical proprietorship of medical journals and maintained an unbroken monopoly for their trade.

Believing, however, that medical men could understand the literary needs of medical men much better than could lay publishers, realizing that only in the hands of free and independent editors could American medical journalism ever attain to its highest development and believing, moreover, that the profession at large would come to appreciate these facts for themselves and lend to medical proprietorship their generous support, a few of us started, not many years ago, a journalism independent of medical publishers. A few of us found the battle too hard and professional encourage-

ment too slow in coming, but enough of us have succeeded and established our journals firmly to prove that it only lies in the hands of the profession itself—in other words, *medical subscribers*—to make an independent medical press, free from all trade influences, an accomplished and universal fact.

When that day arrives, the medical press, released from humiliating dependence upon the advertising agent, will be subservient alone to the personal and scientific interests of medical men and it will become a power for good in the land, whose influence the whole profession will feel and of which, politically and ethically, it is much in need to-day.

This is the dream of those who, like ourselves, have at great personal sacrifice established the practicability of medical proprietorship of medical journalism and it lies with subscribers to make this dream a reality.

Let it be remembered always that a journal belongs to the *individual subscriber*. As he is, as he performs his duty of encouragement, as he pays with promptness or otherwise his subscription, so will the journal be; so will it improve, stand still or retrograde. No medical journal can flourish, can constantly develop to its highest capacity without the willing and efficient financial support of its subscribers. It must feel that it depends alone upon them for its life; otherwise, no matter what financial backing it may receive from outside sources, it will ever remain, essentially if not in name, merely a "trade journal," in which professional needs will and must always be subordinate to the exigencies of trade.

REVIEW.

The Menopause. By ANDREW F. CURRIER, A.B., M.D. D. Appleton & Co., New York, Publishers.

Physicians who attend gynæcological patients at our hospitals and clinics, frequently have evidence of the vague ideas that many general practitioners and the laity have of what may occur during the menopause. Nearly every known gynæcological and nervous condition occurring in women during their "change of life" has been attributed to this condition, and many women whose condition demanded prompt and energetic surgical treatment have been assured, without examination, that all would come right after the menopause.

That this ignorance on the part of the family physician, to whom these patients usually first apply, is being appreciated is shown by the fact that two volumes upon the same subject have been published almost simultaneously, the one before us and that of Dr. Napier, of England. These are the first original works that have appeared upon this subject in the English language in at least a decade.

In this work the author aims to controvert two popular errors of traditional teaching:

1. That the menopause is a dangerous time or experience.
2. That there is an intimate relationship between the menopause and cancer, especially of the womb and breast.

In his endeavor to correct these errors it is possible that the author may be misunderstood, and the fears in regard to the menopause may be allayed to such an extent that the fact that cancer occurs more frequently about this time than at any other may be lost sight of; and while these diseases do occur coincidentally with the change of life, and are frequently not recognized until too late, it is important to keep them prominently in the mind of the profession. It seems to us that the volume would be of more practical value if more attention and space had been given to the so-called normal menopause, and if more of an effort had been made to

assist the reader in determining where the normal ends and the abnormal begins.

Nearly 100 pages is given to the chapter on "Some of the Factors which Influence the Advent and Progress of the Menopause," while less than half that space is devoted to "The Phenomena of the Menopause, Normal and Morbid, and Their Duration."

Some practical suggestions indicating more forcibly when to suspect local disease and when local examinations should be insisted upon would be appreciated by the general practitioner.

So little has been written upon the menopause, that we are glad to welcome a book upon this important subject.

X. Y. Z.

TRANSACTIONS OF THE WOMAN'S HOSPITAL
SOCIETY.

Stated Meeting, June 8, 1897.

A. B. TOWNSHEND, M.D., in the Chair.

Complete Occlusion of the Uterine Canal Due to Injury.

Dr. BALDWIN: Cases of retained menstrual fluid, due to injury causing a narrowing or closure of the uterine canal are not common; suppression of the menstrual flow due to such causes are still more uncommon.

I have seen two such cases, upon which I have operated, establishing the patency of the canal, followed by a return of menstruation.

The first case I have reported before the Kings County Medical Association. The history of the second case is as follows: Mrs. E., aged thirty, born in the United States, married sixteen years, mother of one child fifteen years ago, and one abortion at six weeks fourteen years ago, consulted me October 1, 1896, at which time she complained of a severe and constant pain in left side, low down.

The abortion was self-induced, a pen-holder being the means of accomplishment. For the five years immediately following she did not menstruate, and had no pain whatever; after that time, and without any treatment or any other known cause, she had a regular flow every twenty-eight days with a severe pain in the lower abdomen and left side, but lasting for only two or three hours, and only a few drops in amount. This condition of affairs continued until fifteen months ago, when this slight flow stopped with great increase of pain, constant in character but worse for three days every twenty-eight days.

Examination showed a somewhat sensitive tube and ovary in the left side; the canal of the cervix would admit a thread of silk-worm gut to the internal os; beyond that point I could not get.

On October 4, under ether anæsthesia I forcibly made a passage into the cavity of the body by means of steel and graduated dilators.

A glass stem about the size of a number nine catheter (English) was fastened in the canal.

Four days later and three days before her regular time to have an exacerbation of pain she began to flow with but little discomfort and so continued for three days with but little pain and accompanied by all her feelings of menstruation prior to her abortion.

Since the above report I have seen the patient on several occasions, and she reports the occurrence of her regular flow.

Membranous Dysmenorrhœa.

Dr. W. L. DUNNING: This is a specimen passed by a patient, whom I reported to this Society in January, supposed to be a case of membranous dysmenorrhœa. I did not at the time have a specimen to show. After six months the symptoms returned; not, however, until two months after the electrical treatment had been discontinued, which was done against my advice. I will repeat briefly what I reported at the time. About two or three years after her childbirth this appeared for the first time. It continued to recur monthly for seven years, during which time she had been under the treatment of different physicians. She came under my care about a year and a half ago. I first did a curetting with a sharp instrument, opened the abdomen and broke up adhesions; the uterus was bound down, and one ovary and tube removed. This did not give her relief, so I resumed palliative treatment by local applications and dilating with Feaslee's dilators and applications to the endometrium. As that did not give relief, finally I resorted to electrical treatment which stopped the symptoms. She passed no membrane during six months. She did not continue the treatment; she felt so well that she thought it was useless to keep up the treatment. About two months after it was discontinued the symptoms returned. This specimen was passed about a week ago.

DISCUSSION.

Dr. H. T. HANKS: What treatment other than curetting did you follow?

Dr. DUNNING: Churchill's tincture of iodine to the vaginal vault and endometrium after dilating the cervical canal, glycerine

dressings and vaginal injections of hot water, until the electrical treatment was begun.

Dr. Hanks: Was there any enteritis or colitis at the time?

Dr. DUNNING. Not at that time.

Dr. HANKS: I only ask that question because it is quite a common condition.

Dr. GEORGE H. MALLETT: It would be interesting to know the further history of this case. We should be thankful to Dr. Dunning to report the case later. A great many men get symptoms of relief for a short time, and that is the last we ever hear of the cases; it is reported as cured. I think it is a very fortunate thing to be able to follow such cases up.

Dr. A. B. TOWNSEND: How old is she?

Dr. DUNNING: About thirty years.

Dr. A. P. DUDLEY: Mr. President, I will add to that report a case quite similar, a woman whom I have attended in three deliveries; a nervous woman generally, who has been delivered of two healthy children that are now living, and the third child delivered about three years ago weighed not over two and a half pounds, with an enormous amount of amniotic fluid; the woman was distended large enough for twins. The child lived for four or five weeks, and died, apparently, of liver disease, turned perfectly yellow before death; since that time this woman has been an invalid, although she did not receive injury at the time of the child's birth. She has been under my care part of the time. About two years ago I curetted her, and then she drifted from me to a classmate's hands, and he treated her for some time, and she then drifted into the hands of an electrician, and he treated her for some time without relief, until she became exhausted, and, finally, drifted back into my hands about six weeks ago. She brought a specimen much more typical of membranous dysmenorrhœa than that which the doctor shows to-night. It was almost a complete cast of the uterus and quite unbroken. I examined her very carefully and found a stricture at the internal os, and I believe in most of these cases of membranous dysmenorrhœa we will find an internal os stricture, so there is not a free flow of blood from the uterus but a retention. In this case I took her into my office. I cut the uterus on both sides at the internal os under cocaine, and divulsed it very thoroughly; I made a cut of a quarter of an inch deep at each side of the internal os, cleaned the uterus out, and then

touched the entire endometrium with the tincture of iodine, and packed her for drainage. I kept her in the sanitarium until she was free from pain and sent her home in a carriage. She recovered. I once since touched it with the tincture of iodine, and she is entirely relieved from all pain and is improving very rapidly. Now, whether she will have any discharge of endometrium or not I can not say to-night, but I think, from my experience with these cases, that the condition of the internal os, whether it is free or contracted, has largely to do with this membranous condition from the uterus, and I stretch it just as much as the tissue will bear without rupture. I do not think that carbolic acid does the work. I think that some such application as phenol or the tincture of iodine is a proper treatment. Certainly, this patient is relieved after three years of suffering, by two applications.

Dr. DUNNING: In the case I reported, the symptoms appeared two or three years after her first child. I should like to mention to the Society, in fact, merely to review what I mentioned in January with reference to the obstinacy to treatment of this case. She had been very freely curetted by an eminent gynæcologist, and some months later she came into my hands. She was curetted again and complications were corrected, such as adhesions in the peritonæal cavity, diseased tissue removed and a pretty radical operation done. This did not relieve the symptoms, and then I returned to palliative measures, resorted to all of the means usually followed in such cases, including those described by Dr. Dudley, I think, except dividing the fibers of the internal os; that I did not do; it never occurred to me; I do not think I ever heard of it before. But in addition to two very free curettings I made dilatations of the cervical canal pretty freely with sounds and dilators with applications of tincture of iodine freely over the endometrium, and with no relief whatever. Not until electricity was tried was there any abatement of the symptoms. I have no desire to pose as an electro-therapeutist, but with a disease that has been so obstinate to the usual method, I think it is worthy of a trial.

Dr. HANKS: I have tried very faithfully the electrical treatment, the negative galvanic pole being placed in the cervical canal and uterine cavity in two cases. One case was the wife of a member of the New York Obstetrical Society, who is quite a proficient in the use of electricity, and he treated her with galvanism, perhaps a dozen

sittings, and she was no better; and I treated her with medications, and the usual palliative treatment, which all are accustomed to resort to—such as tampon, iodine, and rectal irrigation. I have had some half dozen other cases where I have tried galvanism as thoroughly as any one can, with negative results, and I have come to the conclusion that only one or two out of three of these cases you can cure anyway, until they have children. I shall be very glad to adopt any method that would give better results.

Specimen of Double Uterus, with Osteophyte.

Dr. DUDLEY: I have not this specimen in good shape, because I have been hardening it and getting it ready for pathological study, but this is a history of the case in a few words: This patient came into the Post-Graduate Hospital in a septic condition about three or four weeks ago, sent in by a *confrère* of mine, and was put into my hands, supposing that she was pregnant and was undergoing an abortion. It seems that she was a little afraid that she might be in a family way, and had consulted a family physician to that effect; he, not knowing whether she was or not, sent her away with a negative answer, and she, being a widow of more than nine months' duration, thought she would consult a midwife, and it was then she came into the hospital bleeding quite profusely, and with a temperature of 104° or 105°. I went to the hospital and examined her, and made a diagnosis of pelvic tumor, supposing it to be fibroid, complicated possibly by pregnancy. At any rate, she was septic, and I communicated with the physician, who sent her in at once, and told him that nothing short of laparotomy would relieve this woman, although I would curette her at the time. The family physician was consulted and the case put into his hands. So far as proceeding with operation was concerned, when the patient was put under an anæsthetic I examined the uterus and found the cavity empty. There was nothing in the cavity of the uterus that I curetted that would indicate pregnancy, so I advised laparotomy, opened the abdomen, and found the pelvic cavity full of blood, the intestines adherent to everything, with two holes in the ileum, with the uterus in the pelvis. I got up what I considered to be the fundus of the uterus, found a hole through it, and traced the blood from the pelvic cavity directly to this hole in the fundus. I broke up the ad-

hesions and delivered the fundus of the uterus as I supposed. I found I could not catch the vessel that was bleeding below it, and so I put a large clamp upon the fundus of the uterus and severed it, really amputating the fundus of the uterus, and simply leaving the clamp upon it. Then I brought up what I supposed to be the right ovary and tube, found it to be attached to the uterus, and removed it by ligature. I could not get up the left side, owing to adhesions, so I left that and packed the pelvis full of gauze and closed the woman up. (She lived twenty-two hours and died apparently of heart failure; that is, she simply sank very rapidly at the end of twenty-two hours.) In breaking up the adhesions about the fundus of the uterus I brought this stone out from the cavity of what I supposed was the ruptured fundus of the uterus, and around it, of course, there was some pus. Upon post-mortem examination, I found that I had to deal with a true horn of the uterus, to which was attached an ovary and a tube that I had not removed. If you examine with the sound you find that there is a distinct uterine cavity; there is the tube, the ovary, the part of the tumor that I removed, and a distinct uterine cavity running into the horn of the uterus. Here is the true horn of the uterus to which was attached an ovary and tube. Whether I am right or not, of course, some pathologist will be able to say when it is properly examined. It seemed to me that I had to deal with a triple uterus, in the center one of which was the stone. This central portion of the uterus held the stone. The midwife had punctured through the center of the uterus, and the hæmorrhage was here; there were three distinct canals leading into it. The woman died of exhaustion. There were two openings in the intestine. There were two tubes; I removed one, which was filled with pus. There is the central canal where it was severed from the vagina.

DISCUSSION.

Dr. MALLET: She never had a child?

Dr. DUDLEY: No, she had been a married woman for a number of years and never had a child. The only question that I can raise concerning the specimen is this: Could that central portion have been a fibroid, the center of which had degenerated to form the osteophyte? I did not curette either of these uteri that are well-

formed. The curettage was in the center of the three uterine structures. The post-mortem showed that she had no peritonitis, she did not suffer from hæmorrhage, but simply died from loss of blood, sepsis, and shock. I have seen two cases of bicornate uterus within the past year and a half. I had one case in the Harlem Hospital, a woman who came down from Auburn, N. Y., and I opened the abdomen, and found two distinct uteri, with the septum at the vaginal junction, a cervix, and then two uteri a little under the normal, and the tube springing right from the top of one, and an ovary at the extremity of the tube. I removed both ovaries and tubes from the woman and she got well; but this one showed the opening right through the central portion of the mass that you see, and the clot of blood as big as my fist lying in contact with it.

Dr. HANKS: I did a vaginal hysterectomy and removed a uterus bicornis, and the patient did well.

She had been curetted by her family physician in hopes of curing her sterility. This was followed by septic neuritis.

Notes on Some of the Symptoms of the Menopause.

BY G. H. MALLETT, M.D.

(See page 193.)

DISCUSSION.

Dr. DUNNING: I would like to mention that I was treating a lady for a paralytic condition of one of the upper extremities with a faradic current, and it was a case which Dr. Emmet had operated on twelve months before and removed both ovaries and tubes, they both being diseased, during which time she had not menstruated. The electricity for the paralytic condition brought on the menstruation; which, however, was only temporary, as it failed to recur after the electricity was discontinued.

Dr. TOWNSHEND: Where did you apply it?

Dr. DUNNING: To the surface of the body only.

Dr. TOWNSHEND: Have any of the gentlemen present an idea of the proportion of operable cases that come to clinics for carcinoma?

Dr. J. N. WEST: I have had a little experience in that regard

at my clinic at the Woman's Hospital, which corroborates exactly what Dr. Mallett has stated in his paper about these persons thinking that it is simply menopause. I had one day a remarkable record of three cases of inoperable carcinoma of the uterus that came into my clinic there, and thought they were having the menopause, and the hæmorrhages were disturbances due to the menopause. They were beyond the operative stage.

Cystic Degeneration of Fibroid.

Dr. LE ROY BROWN: I have a specimen here of what is commonly called a cystic degeneration of fibroid. It is preserved in formalin. It is a beautiful illustration of the cystic degeneration of fibroids. It is one of two cases operated on by Dr. Cleveland within the last two weeks, and in both instances the fibroid was so soft that at the time, except for other reasons, it was difficult to say whether it was a cyst or solid tumor, and I show it as an exquisite illustration of the retrograde change that takes place in them. I am not a pathologist, but it is generally understood that these retrograde changes do not take place in a myoma; that is, they only take place where there is a lack of circulation in the fibroid itself, and this fluid that collects in the tumor is not cystic; it is simply a collection of a clear albuminous solution. This specimen is a very pretty illustration of the fact that this degenerated change does take place in tumors involving the entire body of the uterus; in other words, does not occur where you would expect the circulation to be complete. In this specimen the tumor is on the posterior wall of the uterus, where you can readily understand that the circulation could be in part impaired.

Change of Technique in Hysterectomies.

In showing this specimen I wish to call attention to the method that Dr. Cleveland has of late been practising in doing his hysterectomies. In doing these operations of abdominal hysterectomy at the present time, the doctor has rather modified his operation, and, instead of tying off and cutting first the uterine artery, as he formerly did, and afterward ligating the ovarian, he at present separates the bladder, then makes his incision posteriorly, so as to divide off entirely the

tumor, leaving the broad ligament intact; he punctures the broad ligament with his finger, dividing it in the center; then, with a pair of clamps, he goes through the vagina and clamps the broad ligament as far up as the opening made by his finger; he clamps the uterine artery on the other side in the same way; then he has simply to tie off the ovarian above. It is a much better operation, and much easier. Of late, in Dr. Cleveland's service at the Woman's Hospital, we have been having a secondary temperature, commencing ten days or two weeks after the operation. An examination shows this to be due to the sloughing of the stumps embraced in the ligatures. Leaving these ligatures off and going back to the clamp; although the stumps slough, it is much more rapid and it is exfoliated more rapidly, and we do not have that after-temperature, with delay in getting out of bed.

*Inflammatory Septic Exudate in the Broad Ligament Approaching it
from below between the Folds of the Ligament; Extra-
Peritoneal Operation.*

The second case is of some interest, because it is rather a unique way of reaching the trouble. The patient came under my attention some time ago at the Northwestern Dispensary, about the latter part of February. She had a fluid tumor on the left side, somewhat fixed, and I thought it was an intraligamentous cyst. I sent her into the hospital for an operation. Dr. Cleveland did the operation—it proved to be an intraligamentous cyst. The patient made an uninterrupted recovery. About the tenth day she began to complain of pain in her left side, and there was a slight rise of temperature. On examination by the vagina, there was a mass over the former site of the tumor the size of my fist; it was surprisingly hard—as hard as a board. The question arose as to whether it was possible that there could have been a fibroid underneath this cyst which had escaped our notice at the time of the operation. We waited for a few days, thinking that it would soften down, but it failed to soften, in fact, extended, and this hardness continued. It was on the left, under the broad ligament, extending anteriorly. The question was how to get at it. I took a Pacquelin cautery, and with the curved tip cut the vagino-cervical connection from midway anteriorly completely around to midway posteriorly; then, after dividing that down

to the connecting tissue with my finger, after Pratt's method, but most satisfactorily to me at the time, began to strip up the connective tissue. I do not think altogether a dram of blood escaped. By working up little by little for at least two inches, my finger came against this hard mass. It was cartilaginous to the touch, and I could not work my hand in it. With a pair of forceps I forced my way in, and then, by opening the forceps, I made a hole in the tumor large enough to introduce my finger. I found a cavity containing probably the capacity of half an ounce, and it was filled with broken-down blood clots. Evidently the origin of the poison was unreliable catgut. Of course, I do not say this to criticize our catgut, especially since the experiments which have been made of late with catgut from certain sterilizing manufacturers in New York prove that it is not sterile. The interesting point to me was the ease with which I reached that mass through the folds of the broad ligament. I did not expect to succeed in reaching it without rupturing the uterine artery; but I see no reason why in all these cases it should not be tied, and then, one can go right in through the folds of the broad ligament. Of course, we do not have cases like this every day, but every man runs across a suppurating stump, and it is often a question how to get at it. If you open posteriorly through the cul-de-sac you have to go into the general cavity first, but, by making such an incision as I did and going between the folds of the broad ligament, it seems an eminently safe procedure for the patient. In this case I put a double drainage in, and in the course of two weeks this exudation resolved. There was no pus when I first went in, simply a broken-down blood clot.

Use of Tubular Drainage in Connection with Gauze.

Another thing that I wish to bring up, and I would like simply to touch upon it, is with reference to hysterectomy generally. It is a habit in Dr. Cleveland's service at the Woman's Hospital to drain with gauze, as I suppose it is with all others. We expect, and it is the common thing, to have a temperature running about 100°, rectal; you generally get it, and you are surprised if you do not get it. It has been with me a question why we should have any temperature at all in a thoroughly aseptic operation without any pus, with clean gauze; and it is a question whether it is not due to a lack of drain-

age, because we know that gauze does not drain well after thirty-six hours. It is common to have an accession of temperature relieved by pulling down some of the drainage gauze; *i. e.*, reëstablishing drainage.

Some time ago I assisted Dr. Cleveland in a hysterectomy, which consumed four hours. Every complication generally met with was encountered in this case. Pelvic gauze drain was used, and, to be doubly sure, a heavy rubber drain the size of my finger was put in the center of the gauze, and the end in the pelvis covered by gauze. The temperature never went above 99, and that rubber tube drained beautifully. It occurred to me: Was not the fact that in this case, with a long operation of actually four hours' duration; with many times more complications than the usual hard cases; going right along with a temperature of not higher than 99 and making a perfect recovery, partly due to this extra drain, when we ordinarily use only the gauze drainage and get a little over 100°, is not it due to a lack of drainage?

Abdominal Record of the Hospital in the year 1896-97.

Before closing these few remarks, I would like to say that last Sunday I was glancing over the reports of the Woman's Hospital, and ran over the abdominal sections done. There have been 200 from the first of October, 1896, to the third of June, 1897. The entire death-rate in the 200 cases was 18, or, in other words, 9 per cent., which I think is, as far as I know—you take five men operating and only 9 per cent. die—the best year the hospital has had for a long time, and I do not believe any other hospital in the city is superior to it or equal. Some of these sections were done by the five assistant surgeons.

DISCUSSION.

Dr. MALLETT: There are so many points of interest that Dr. Broun has brought out, it would be impossible to touch on them all.

I would like to ask, in regard to the method of Dr. Cleveland: he opened the abdomen and separated the bladder and went back by way of vagina and ligated those vessels. I think it is often a wise procedure to separate the bladder first; in fact, one can lift it up very much better; but it seemed to be rather an unwise thing, after opening the abdomen and separating the bladder, to then go back to the

vaginal work. I do not see why he could not have done it in the first place.

Dr. BROWN: We suppose that the vagina is thoroughly sterilized. The bladder is separated, and then the cul-de-sac is opened into the vagina, you have nothing left except the broad ligament; let your finger stick through the broad ligament in the center, and you can easily with a clamp run it right up and clamp the broad ligament up to where you have made the hole with your finger. It is done so much more quickly. The idea the doctor had in starting to do this was the secondary rise of the temperature on the tenth day and the delay in sitting up following.

Dr. MALLETT: What effect has separating the bladder? Is it easier to grasp the ovarian artery after the bladder is separated from above than from the vagina.

Dr. BROWN: Where the tumor is large we have to go in through the abdomen; often the cervix is so high up that it is difficult to separate the bladder by the vagina.

Dr. MALLETT: If he is going to catch the ovarian arteries from below, he could afterward separate the bladder.

Dr. BROWN: In order to clamp off the uterine arteries, you must separate the bladder sufficiently high to get a clamp on. The cervix in the great majority of cases is distorted above the pubes, and it is with great difficulty that you can separate the bladder by the vagina; it is much easier to do it by the abdomen.

Dr. DUDLEY: I would like to criticize that question, and I would like to answer it, and show just the one advantage that Dr. Cleveland had in doing that, and it is one that I have thought of a good deal, simply because I believe, as Dr. Mallett says, it is easier to make your vaginal section first and get your clamps on the ovarian arteries, and they serve as a guide for you the moment that you go into the abdominal cavity. You have the major portion of the hæmorrhage stopped, and you have the two ovarian arteries clamped. The one disadvantage in doing it from below is, when you clamp the broad ligament you do away with the elasticity of it. You can not lift the uterus through the incision; you have got to work with the broad ligament *in situ*. That is the advantage that Dr. Cleveland has in doing the work from above, and putting the clamp on afterward, simply because he can stretch the broad ligament; whereas, if you put the clamp on first you can not. It is a grave

point, one well worthy of discussion. If I could operate through the vagina and rectum and not put the clamp on until I tied the ovarian arteries, I should certainly work to an advantage; but the hæmorrhage, of course, from the section of the vagina and rectum is so great unless you have a clamp on the uterine arteries, that it is not safe to leave the broad ligament unclamped while you work. I have done the other operation—that is, making the section from below—as Dr. Mallett will tell you, a great many times in the past two years, and that is the one disadvantage that we have worked under, but there is an advantage that is equally as good, and that is this, that when you have put clamps on the uterine arteries you have controlled the major portion of the hæmorrhage, and you then ligate the ovarian arteries from above and you know you have all the hæmorrhage controlled, and then ligate the broad ligament down to the top of the forceps from above and you are done.

The second question that he raised, as to the cause of the rise of temperature: You say you do not get any rise of temperature if you do not drain, and you believe you do get a rise of temperature if you drain. Why should you get temperature? It is simply a question of rise of temperature from surgical incision, just as you get it in any part of the body, a little heat about a wound. It is not due to sepsis at all; it is simply due to the local condition. You get the same temperature if you do anything in the pelvis, and do not drain, and in so much as you are draining and the pelvis is clear and you get a rise of temperature, it is certainly nothing to worry about.

The third point I wish to touch upon: I want to ask the doctor a question. He lays the formation of the blood-clot to the catgut in the pelvis. I want to ask him if, when he went into the cavity through the vagina, he exposed the intestine. If not, then he can not lay that blood-clot to the use of the catgut, because it was below the site of the introduction of the catgut. Here was a sac and you quilted off the top of it and got an ounce of blood in it; then, if that blood was in the general peritonæal cavity, it was extra-peritonæal. Of course, it was a secondary hæmorrhage into the broad ligament.

Dr. BROWN: Infection from catgut does not take place on the surface of the catgut; the infection takes place in the core of the catgut, and if any catgut is put into a wound and moderately sterilized, you get trouble from it in about five or six days. It is not from the surface; it comes from the core.

Dr. DUDLEY: Why should the infection run down rather than up?

Dr. BROWN: It was the connective tissue between the folds of the broad ligaments; it was much easier to work that way than to work up. If I use catgut and have any trouble after five or six days, no matter if I prepare it, I think it is due to the catgut; but I am not criticizing the men who make that catgut or sterilize it. Lately, our senior house-surgeon, Dr. Pinkham, who has been splendidly trained in this bacteriological work, has been making tests of catgut that you and I use in this town, and he has found the streptococci in all of them, or, in other words, it is not sterile.

Dr. DUDLEY: If this was sepsis from catgut, why should you get a broken-down blood clot?

Dr. BROWN: Some blood-clot probably formed in the folds of the broad ligament, and it lay there, and would not have become infected in the least if there had been nothing to infect it. Air does not infect it at the time of the operation. There must have been something in contact with it, and the only thing in contact with it was catgut.

Dr. E. E. TULL: Was that an original operation of Dr. Cleveland's?

Dr. BROWN: Oh, no, not at all. It has been done years ago. I remarked he went back to that method.

Dr. TULL: I should like to suggest that the normal temperature that Dr. Brown had after the prolonged operation in that case was probably due to shock.

Dr. DUNNING: I would like to ask Dr. Brown if he regards a temperature of 100° per rectum as an abnormal temperature.

Dr. BROWN: Yes, certainly.

Dr. DUNNING: What would you call a normal temperature, taken per rectum?

Dr. BROWN: A normal temperature of a child is 100° by rectum; adult, 99°. I have never found a difference between the mouth and the rectum, unless the man had been eating ice.

Dr. HANKS: I have lately had a practical illustration of a type of cases which was exceedingly interesting to me, and which I find unsafe to attack per vaginam. My first case I had some three years ago in the Woman's Hospital, an extra-uterine pregnancy, where the patient had a large blood-clot under the left broad ligament. She

was almost moribund when she came in. I opened it through the vagina, removed the clot, irrigated, and packed with gauze. The hæmorrhage continued the following day, however, and it was so pronounced that I decided I must do a cœliotomy, and check at once the bleeding. I did so, and found that the hæmorrhage occurred, not from the left tube, as I had supposed, because of the blood-clot lying in this locality, but the hæmorrhage came from a ruptured tube on the opposite side, and the blood found its way down to the left side and the left broad ligament, and if I had any number of retractors and all the light of the best hospital in the city, it would have been impossible for me to control the hæmorrhage from the incision in the left side of the median line through the vagina. In other words, I found that it is not safe in such cases as this one to open through the vagina.

A very short time ago in the Woman's Hospital another patient came in very similar to the first, with all the subjective and objective symptoms of rupture, and the tumor was most pronounced on the left side. I tried to manage this case also by operating through the vagina, in spite of the fact that the former case had not been quite forgotten. I thought that with the retractors and good light I could find the artery and control hæmorrhage. I made the incision under the left broad ligament, and found a large clot, very hard, removed it carefully and wisely, as I thought, and the hæmorrhage started promptly, profusely, after the removal of the last clot. I worked rapidly to catch this artery. I thought I had caught it, supposing, of course, since the tumor was on that side, since the induration was on that side, and the other side was so free from blood-clot, that it was the left tube which had ruptured. I did catch the left tube, but did not check the hæmorrhage. I immediately prepared her for abdominal section, and in less than ten minutes the right tube was clamped, and all bleeding ceased. I then found that the blood-clot had been just where we had supposed it was, that the left tube and ovary were perfectly normal, and the fimbriated extremity of the right tube was underneath the left tube and ovary, and the hæmorrhage had come from the rupture of the fimbriated extremity of the right tube. I only mention these cases as a type of cases of ruptured tubal pregnancy where vaginal section is unsafe. I should like very much to have Dr. Grad mention some of the symptoms of the last patient. I believe we ought to be able, and I feel that I am able and

willing, to do a vaginal hysterectomy when it is wise to do one, and a vaginal section is a wise thing to do for p^us cavities—but not for ruptured tubal pregnancies when a large clot is present.

Dr. GRAD (by invitation): The patient Dr. Hanks refers to was already septic on admission to the hospital. A few hours after operation her temperature was 104° F.; pulse correspondingly high. For about three days following, the temperature ranged between 103° and 104° F. In addition to the usual means employed in the treatment of these septic cases, in this case rectal irrigation was resorted to, as recommended by Dr. Kemp, of this city. As much as five gallons of normal salt solution were used at one irrigation. The results seemed very satisfactory. Peristalsis of the intestines started up, the bowels moved, after which the temperature came down to normal, complete recovery following in a few weeks.

Dr. WM. D. HAGGARD, JR. (by invitation): Mr. President, I am sorry that Dr. Hanks has given his disapproval of operations per vaginam, because we have all learned to venerate his opinion so very much that it is going to make us a little chary in doing this operation. We have all heard with a good deal of interest of Dr. Kelly's fifteen cases, three of which were entire and complete successes, and in two of which he had to open the abdomen. Since that time Dr. Mann, of Buffalo, has reported six, and I had one case that I may say was entirely successful. I had thought from that we could use this method in those old cases of rupture that were walled off from above by inflammatory exudate, and was disposed to think that this method had given us a very decided gain; because we all know that abdominal operation in cases of ectopic gestation is one of the most formidable operations in surgery, and, if it is possible to drain them from below with any degree of success, I think it would be a decided gain. But we must bear in mind what Dr. Hanks has told us, and, I think, if we will also take that other point, namely, be ready to do an abdominal operation if necessary, if then we are compelled to open the abdomen, we have done nothing amiss, as we should have originally had to open the abdomen anyhow. Mr. President, I feel that the mention of the case is a confirmation of a case reported by Dr. Crawford to the Tennessee Medical Society last month. In that case I suggested to Dr. Crawford the possibility of tapping it, draining it from below; but, as nothing succeeds like success, he had treated the case abdominally, and had saved her. I

suppose that the majority of cases that are treated through the abdomen can be saved, but I must believe that there are cases that are walled off from above, where vaginal draining will cause a cure.

Dr. HANKS: I spoke of these two cases as a class of cases that it is not wise to attack through the vagina, but undoubtedly an unruptured tubal pregnancy can be operated on *per vaginam*. In these cases that have been treated by midwives and been curetted by the family physician, as so many of these that come into our hospitals, some three or four this past six months, where they supposed it was a miscarriage, and it was a typical case of extra-uterine pregnancy; in these cases where the blood had been there for some time, and where you do not know which tube is affected, and where you cannot locate the rupture, I go from above every time. When I know where the tumor is or where it probably is, and where the rupture is, I shall go through the vagina.

Official Transactions.

G. H. MALLETT, *Secretary*.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, April 6, 1897.

The *President*, ROBERT A. MURRAY, M.D., in the Chair.*Specimen of a Pelvis after Hysterectomy.*

Dr. W. R. PRYOR: About a month ago I got a subject from the Morgue, for the purpose of having an illustration made of hysterectomy. I found that somebody had taken the uterus out many years before, through the vagina, and I got some very nice photographs of the appearance of the pelvis after that operation. I say it was many years before, because only one ligature was found, and that was calcified on the right ovarian artery. I thought it better to take out the iliac artery and branches, which I did, as I wished to see how after many years the uterine artery obliterated looks. I had a section made, and was very much surprised to find that although the hysterectomy had apparently been perfectly done, the uterine artery was patent. It is a very valuable specimen to me, and it seems to me that at last we can explain some of those cases of late hæmorrhage which occur after hysterectomy and long after the ligatures have come away. There was no question that the man had taken out the uterus between ligatures, and yet if you will look at this section through the microscope you will see that this uterine artery is uninfluenced by the operative procedure. The section was taken from the end of the artery near the vaginal cicatrix. We could understand how the current of blood could become reëstablished if there were many branches of the uterine arteries, but why it should occur in an artery which is $2\frac{1}{2}$ inches in length without any branches I do not know. The ovarian artery was not found at all; that was entirely obliterated.

Specimen of Uterus Removed for Intractable Hæmorrhage.

Dr. EGBERT H. GRANDIN: It does not occur frequently that vaginal hysterectomy is deliberately performed for the purpose of

controlling intractable uterine hæmorrhage which otherwise is slowly killing the woman, and this is my justification for the report of the following case and the exhibition of this specimen. I saw this case a few weeks since in consultation and obtained the following history: The latter part of December, 1896, she had been thoroughly curetted by a man for whose ability I am prepared to vouch, the indication being uterine hæmorrhage. Notwithstanding this operation she had repeated hæmorrhages which could neither be controlled by packing the uterus nor by large doses of ergotin.

When I saw the woman she was in a condition of acute anæmia, the pulse ranging about 130, the mucous membranes absolutely colorless. On local examination I detected simply a uterus a trifle enlarged. The cervix was firmly closed. In giving an opinion, I argued that another hæmorrhage would kill her, and that, therefore, I would advocate total extirpation, although it was with considerable reluctance that I was prepared to deliberately sterilize a woman of twenty-three, with no perceptible disease of uterus or annexa.

The next day Dr. Collyer anæsthetized her for me, and with great reluctance, for her condition was such that it seemed almost criminal to subject her to the risk of anæsthesia. I slit the cervix with the hope that digital examination might reveal the presence of a small polyp or submucous fibroid which might be removed or enucleated, but I was unable to pass my finger above the lower uterine segment. I at once clamped the uterine and the ovarian arteries, and removed this uterus. On opening it, I found this nodule at the right cornu, the size of a small cherry and exceedingly vascular. It was quite evident now why the curette was not able to check the hæmorrhages and why the tampon and the ergotin had proved useless. I have not as yet examined this nodule, but my assumption is that I am dealing with an angioma, or angio-adenoma.

At the last meeting of this society I am informed a discussion took place relating to the fallibility of the examination under the microscope for the purpose of diagnosis of scrapings from the uterus. This specimen is of the kind where microscopic examination would be exceedingly fallible for the reason that nothing would be revealed, although actual disease was present. This has been my experience in a number of cases where the pathologist has reported no disease of a malignant type, although after operation such was found.

The after history of this case is specially interesting. For at least one week she was more dead than alive—to use an hibernianism. Every three hours the rectum was irrigated with hot salt solution and every three hours she received from two to four drachms under the skin. These measures appeared to keep the heart acting. Fortunately, after the first twenty-four hours, I was enabled to give her ample concentrated nourishment. On the ninth day the kidneys shut down absolutely and uræmic symptoms appeared. I practically gave her up, but, nevertheless, resorted to the hot saline irrigation of the bowel, which has answered me so well in a number of desperate cases of kidney insufficiency. I am speaking of continuous irrigation for hours. The kidneys began to act again, and now the red color is beginning to return to the mucous membranes, and it is only a question of time before the woman is restored to health.

DISCUSSION.

Dr. C. A. VON RAMDOHR: I would like to say that I have seen a similar case in an unmarried woman whom I curetted several years ago several times, and the bleeding did not stop. The uterus was removed for the very same indication, and with very good results. I regret to say that I do not know about the microscopical appearance of the organ after it was removed.

Dr. H. T. HANKS: About eight years ago I had a case very similar to this one. I had watched her for several years, and curetted her twice in the course of six months. But it did not cure the hæmorrhage, and she finally came into my private hospital, and I removed the uterus per vaginam. I found about the condition you see here. The microscopist reported that it was adenoma. She was not as anæmic as the doctor says this patient was, but the conditions were about the same. She is well to-day.

Dr. H. N. VINEBERG: I would like to report a case of a woman who had been curetted eight times during the last three years. The uterus on examination does not seem to be much enlarged, and it is difficult to see why it goes on bleeding. The question came up in my mind as to the indication of total extirpation. I hesitated to do so in a woman who had no apparent organic disease and no lesion of the uterus excepting continuous hæmorrhages. The woman has been under ether each time, and the urine shows a trace of albumen.

This case also reminds me of one I saw a few years ago, in which the curetting was given to the pathologist, and a diagnosis made of adeno-carcinoma, and advice given to remove the organ as soon as possible. We removed the uterus, and found a somewhat similar condition to what exists here.

At that time there were some pretty hard remarks made for removing the uterus, though the clinical subjective signs pointed to malignancy.

Dr. FLORIAN KRUG: I think Dr. Grandin may have been very wise in stimulating the heart and giving it more material to pump through the body by employing continuous irrigation and subcutaneous injection, but the safest way is to open a vein around the arm and give intravenous injection of sterilized salt solution. In that way he would have obtained an immediate result and gotten her over with it.

Dr. GRANDIN: In regard to that I would say that some ten years ago I had a couple of puerperal cases where I used intravenous injection, and there is one difficulty: It is hard work to find the vein in these cases, and then again, you have not always got the proper apparatus ready to do an intravenous transfusion. For that reason I gave it up. I use the salt water injections for two purposes: first, the immediate stimulating effect on the heart—not the spurring effect you get from alcohol, which I think is dangerous in these cases. Then we get the slow effect of improving the quality of the blood, which comes from the absorption which unquestionably takes place from the colon. I have thought that the intravenous injection of salt water had given way to the injection into the subcutaneous tissue. There is a difference between acute shock and acute anæmia; I do not wish to be understood now as referring to acute shock.

Beck's Hysteropexia.

Dr. VON RAMDOHR: Mrs. H., thirty-five years of age, a widow, III-para, a very stout woman, was admitted to St. Mark's Hospital March 31, 1897, suffering from a prolapse of the uterus, the os appearing about one inch outside of the vulva, the result of a laceration of the perinæum. On the same day I performed Beck's hysteropexia, and to-day took out the stitches.

The result seems to be very encouraging. The uterus is high

above the pubes, no pain is complained of, and neither defecation nor urination have been interfered with.

I would advise the members to give this new procedure a thorough trial. Neither Alexander's operation nor the ordinary ventrofixation can be at all compared to the operation which fixates the uterus much higher, much firmer, and more movable to the abdominal walls.

DISCUSSION.

Dr. GRANDIN: I would like to ask how this differs from the suggested method of intraperitonæal shortening of the round ligaments.

Dr. VON RAMDOHR: The uterus is a great deal higher up, and is fixed much more firmly. You can drag it up as high as you see fit. The fundus uteri in this particular case is almost midway between the pubes and the umbilicus.

Dr. GRANDIN: If you lift it up that high, is the woman not going to suffer from the upward lifting to the same extent that she suffered before from the downward sinking?

Dr. VON RAMDOHR: The idea is that this particular woman could not do her ordinary work on account of the prolapse. She needed a very firm support, and I think received it. This report is only preliminary; I will hereafter report the result of the operation.

A Case of Tubal Pregnancy, Unruptured, Diagnosed and Operated Upon at About the End of the Fifth Week of Gestation by Laparotomy. Result: Recovery.

Dr. J. E. JANVRIN presented the specimen, with the following history: March 17, 1897, I was requested to see Mrs. P., forty-two years of age, who had borne one child seventeen years previously, and who had never been pregnant since that time. In consultation with the family physician, Dr. E. M. Morrill, I examined the patient and found the uterus very slightly enlarged and pressed somewhat toward the left side. The left tube and ovary seemed to be perfectly normal. The right tube was enlarged, beginning at a point about an inch from the uterus, and extending outward through its entire length to the fimbriated extremity. This enlargement was about the size of a small pear, and very much the shape of a pear, the blunt

or broad end presenting at the fimbriæ. It was slightly movable and painful to the touch. The breasts were sensitive and the areolæ darkened somewhat more than normal. The previous history of the case for a period of about one month is herein incorporated, furnished by Dr. Morrell:

Case of Mrs. P., aged forty-two: The patient is tall, rather well built, and well nourished. She was married when twenty-four years of age, and in the following year gave birth to a male child. Since then she has had no children and no miscarriages. She was operated upon about three years ago by Dr. Janvrin, who did a perineorrhaphy, trachelorrhaphy and curettage, together with Whitehead's operation for hæmorrhoids. With the exception of these operations and occasional attacks of indigestion, her history is a very clear one. I was called suddenly on February 2 last to attend her in her recent illness. She retired the night before feeling perfectly well, and, in fact, states that for several months previous to this time she had never felt better in her life, as she expressed it. On the date above mentioned, about 6 o'clock in the morning, she was taken with a very severe pain while at stool, over the region of the gall-bladder. In fact, on examination over this point, there was great evidence of tenderness. She had no vomiting, temperature was normal, pulse normal. A hypodermic relieved the pain, the bowels were freely moved, and in two days' time she felt as well as usual. She became unwell during this first attack. I was again sent for hurriedly on the eleventh of February, when she had another attack of pain; this time, however, starting in the right iliac region, pretty well down. A hypodermic again relieved this pain, and a large enema was followed by a large expulsion of gas. In a day or so she was relieved and able to go around the house. The symptoms she presented led me to believe at this time that it was one of her old attacks of intestinal colic, only in a more severe form than usual. This opinion was concurred in by my friend, Dr. Sherman, and I simply carried out the treatment which I had before started, namely, to relieve the intestinal dyspepsia.

On March 2, she had another attack of this pain again, occurring in the right iliac region, but extending over the whole abdomen, with marked tympanites, which was relieved by giving a large enema, and a liberal use of morphia. On examination at this time I could make out a very slight mass on the right side, a little posterior to the

uterus. I suggested a consultation, but the patient objected, and I permitted the case to go on for a day or so, watching it carefully.

On March 4, she had another attack of this pain, with the same symptoms as before. On examination, I found that this lump, which I had at first taken to be a thickened tube, had increased in size. On March 12, she had another slight attack of pain, not so severe as before. On March 16, she again had an attack of pain, and on examination, I found that the mass had increased markedly in size, and I demanded a consultation, as I then suspected tubal pregnancy. On the seventeenth, Dr. Janvrin saw the case with me, and concurred in the diagnosis of extra-uterine pregnancy. She was operated on on March 18 by Dr. Janvrin, assisted by Dr. Goffe and myself, Drs. Sherman and Leo being present. During the whole course of these attacks she had been menstruating, having, however, passed no threads or pieces of membrane, as far as was noticed, during this flow.

With the history as given by Dr. Morrill, and the conditions found at my examination I diagnosed the case as one of pregnancy in the right tube, near the fimbriated extremity, and with hæmorrhage into the tube, and in a condition ready to be extended from the tube at any moment. I advised immediate operation. The patient and husband took one night for consideration, and decided the following morning to follow my advice. I operated that afternoon. There were rather strong adhesions of the tubes and ovaries to the pelvic walls, and, in enucleating the right tube and ovary, I squeezed the clot out through the fimbriated end of the tube into my hand, and lifted it up perfectly whole. The tube and ovary were then removed—also the left tube and ovary, the patient, as previously stated being some forty-two or three years of age, and, of course, hardly to be expected to bear another child. There had been no real hæmorrhage into the abdominal cavity proper—possibly a few drops may have escaped through the end of the tube—but the clot was held within the tube by the fimbriæ. The patient has made a perfect recovery.

I will have the specimen carefully examined by a competent pathologist and report result at the next meeting of the society. I think the specimen will prove that gestation was at about the fifth, possibly sixth, week. This is the fourth case of *primary laparotomy in tubal pregnancy*, as described by me in a paper read before the

American Gynæcological Society some ten years ago. By this term is meant operation before any real rupture of the tube has taken place. I diagnosed three of the cases, and at once operated upon them with perfect success. The fourth case I saw in consultation, some three months since, with Dr. Goffe, and we agreed that it was a case of unruptured tubal pregnancy. Dr. Goffe operated and the diagnosis was confirmed. All of these cases recovered from the operation with no untoward symptoms. The cases fully establish the fact, which I announced over ten years ago, *that a tubal pregnancy can be detected before a rupture of the tube takes place, and that laparotomy should be done at once in such cases.*

Of course, in the cases which we ordinarily meet with, viz.: a thorough rupture of the tube, or a tubal abortion, and either of these conditions accompanied by great hæmorrhage and shock, the operation should be done as quickly as the patient's condition will permit.

Three Cases of Ruptured Ectopic Gestation.

Dr. JOHN ASPELL: *Case I.* Mrs. Kate McE., aged twenty-nine years; married twelve years; she has had five children; the last one was born five years ago. Menstruations normal. She menstruated for the last time on January 1, 1897. On February 6 she had a fall from a height, fracturing one or two ribs.

On February 19, she had an intense pain about the abdomen, along with a sensation of bearing down. On the following day she began to flow. For four weeks the flow continued, but without pain. She had a curettage performed at home on March 19. On March 28 I was asked to see her, through the courtesy of Dr. Cremin. She had then a soft tumor to the right of the uterus, quite large, and painless. The following day she entered St. Vincent's, and a laparotomy was performed on April 1.

Case II. Mrs. Anna N., aged thirty-two years; she has been married thirteen years; two abortions at the third month; the first nine years ago; the last two years ago; both were accidental. Last normal menstruation in September. In October she had an attack of pain while on the street, but not severe enough to prevent her reaching home.

On January 3 she had another attack of pain, accompanied by syncope. This was followed by vomiting and increase of the ab-

dominal pain. The following day there was an abundant flow. She remained in bed for two weeks.

In about three weeks she was aroused from her sleep by a repetition of the same pains and the appearance of a profuse flow.

She entered St. Vincent's on February 19. The examination revealed a tumor on the right side of a very soft and large uterus. The tumor was large and painful.

On April 2 a laparotomy was performed. Here the appendix was fixed in the mass of adhesions.

Case III. Mrs. W., aged twenty-nine years; German; married eight years; one child, seven years ago; no miscarriages. The menstrual history quite normal.

Five months after the birth of her child, she had a sudden attack of pain about the abdomen, followed by an abundant flow. She remained in bed for two weeks because of intense abdominal pain and tympanites. For the following three months she complained off and on of pain, and of a leucorrhœa of a purulent character. The pains ceased finally, but the leucorrhœa continued unabated.

She entered St. Vincent's Hospital on March 11. On examination, a tumor was found to the right and posterior to the uterus. It was about the size of an orange and not painful. When told of the presence of the tumor, she readily consented to a laparotomy, which was performed February 26. There was considerable difficulty in breaking up the old bands of adhesions, but with a little perseverance it was finally freed.

Dr. H. T. HANKS presented two instruments: (1) A Needle-holder; (2) a Box for carrying Ligatures. (See under *New Instruments*, page 256.)

Remarks of Ectopic Gestation.

Dr. FLORIAN KRUG: I intended to give an elaborate paper on the subject of ectopic gestation, and present the results of a very large personal experience I have had with cases of the kind, but the grippe played havoc with my constitution and my vocal cords, and I must content myself by simply showing you the specimens tonight, and giving you a few remarks on them, hoping that it will result in a discussion of a subject that we are certainly all interested in. What induced me to choose this subject for a paper was that last

Fall, during the short space of five weeks, we had to operate on five cases of ectopic gestation in the German Hospital, with only one ward. When I remember that in 1884 the statement was made that in 16,000 obstetrical cases but five had been seen of ectopic gestation, it struck me that either the women are entirely changed, or we recognize these cases more readily. Dr. Thomas made the statement to the American Gynæcological Society in 1885, that in eighteen years he had seen twenty-seven cases of ectopic gestation. Now, almost as many specimens are around here to-night. The reason we see them more frequently nowadays is because we have learned to diagnosticate those cases, we have studied them, and with our modern methods we know what to do for these women. Many cases were put down as acute hæmorrhage, without being recognized as ectopic gestation. Dr. Forman, of Philadelphia, who has done as many autopsies as any man in the country, has found thirty-five cases of ectopic gestation, causing death, where it was never recognized, and the death certificate was always something else. Right here I want to show a specimen, which is quite a number of years old, which came near putting a fellow-practitioner in a very nasty hole. I was sent for, and arrived after the patient was dead, she having died almost immediately when the doctor gave a stimulating hypodermic injection. The people turned against the doctor, and believed he had administered some poison by mistake. When I looked at the patient I had my suspicion whether it was not possibly death by ectopic gestation, and I opened the abdominal cavity and found that to be the cause. A point that I wish to make is that the time has passed when we have to discuss here the preposterous use of electricity, or morphine injection, or anything like that when we recognize extra-uterine pregnancy. It is preposterous to use them for the simple reason that it has been proven long ago that on the death of the foetus the danger to the woman has not gone by any means. Aside from the fact that in a great many cases of tubal abortions the ovaries are impregnated, and there will be a moderate amount of hæmorrhage, forming a hæmatocele which is liable to be absorbed, and cause the woman a shorter or longer illness, a great many of these cases will finally turn into suppuration, and will demand a radical operation after all. In connection with this I want to show a specimen cut open a few years ago by the pathologist of the German Hospital in connection with myself.

[At this point the speaker made a remark which the stenographer took to be an instruction not to report these remarks, as the Doctor would supply his paper later. Consequently, a part of the presentation of specimens is omitted.]

I remember five years ago showing a specimen, and some gentleman objected to the name of extra-uterine pregnancy being used because no fœtus was shown. I asked him how many cases of abortion he had seen. He gave the number. I asked him in what percentage of the cases he saw between the first and third month he found the fœtus. He said he could not answer. I said: "Look over your statistics, and if you find that in 33 1-3 per cent. of all the cases where you make a diagnosis of miscarriage and treat the woman as an aborting woman, you do not find the fœtus; you have no more right to call the woman an aborting woman than I have to call this an extra-uterine pregnancy."

There is something that always makes me think of extra-uterine pregnancy when I hear a history of a woman who has some typical laceration at one time or another, and who has once fainted because of a sharp, severe pain on one side or the other. There is something about the character of the pain in extra-uterine pregnancy that makes a woman describe it entirely differently, and which renders it less able to be endured than any other pain, than the cramps, the severe pain in acute appendicitis, peritonitis, the worst labor pains, the pains of an artificial abortion. If I may trouble you to note the histories, you will find that there is at one time or another an acute, sharp pain which causes a strong, healthy woman to faint away. That is something which always startles me, and makes me inquire whether it can be an ectopic gestation. Another thing that you will find in all the text-books, under the head of the symptoms of extra-uterine pregnancy is cessation of menstruation.

It is absolutely wrong. There are some women who bleed again in two weeks after the last normal menstruation; others will go on for six to eight weeks, and then have another. Then they will have regular hæmorrhages, and curettage and all sorts of things are resorted to, and very often valuable time is lost before the patient is operated on. As to treatment, I think I have touched on that before. The woman is not safe, whether the fœtus is dead or not. So

we may as well dismiss from the start as scientific treatment of the woman any means that can only tend to kill the foetus, because often after the foetus is dead a long time the woman can die from acute hæmorrhage or from septicæmia. On the other hand, there are a number of cases on record where the woman has an acute abortion when the case was diagnosticated; she went on and was sick for a long time; the hæmatocele that formed was not sufficient to kill the patient at the time; and the septicæmia not so strong as to shut off the peritonæal cavity, and the woman got well, apparently. Because there are a few such cases are we entitled to sit still and do nothing for a woman in whom we recognize this condition? By no means. One might as well say that because we know people have fallen out of fourth-story windows and got through with a few bruises, that it is a safe thing to jump out of a fourth-story window. When you find this condition you should operate. You may have made a mistake in diagnosis, but you have done your duty by the woman. If you allow her to go on you never know what will happen. I want to go a little further and illustrate the cases in which women have refused operation, and the serious results that have come to them, but there is not sufficient time. In operating I use the salt solution. I do not believe a patient should be stimulated too much before you reach the bleeding spot, because it will only tend to increase it; but I use it the moment the clamp is on and the ruptured tube or ovary is ligated. I must say I have had most happy results from subcutaneous injection, but the thing at the time of operation is intravenous salt solution.

DISCUSSION.

Dr. W. T. Lusk: I have given a good deal of attention to this subject, and it so happens that I see in the course of every winter a considerable number of cases. I regret to say that I have not always had the good fortune that Dr. Krug has had in always being able to make a diagnosis. Sometimes in the presence of the students I can say: "I think this to be a case of extra-uterine pregnancy," and yet find on making an abdominal incision that I really have only to deal with an ordinary case of salpingitis. Many of the cases that have come under my observation I have discovered by accident. The number of cases that I could say certainly were ones of extra-uter-

ine pregnancy, has been comparatively small. I regret this exceedingly, and hope before the discussion is ended I shall get so many diagnostic points that I shall have less uncertainty in the future. There are one or two matters that it seems to me might be mentioned in connection with this subject, although they have been discussed many times before. In old days, when men rarely recognized cases of ectopic gestation—Dr. Thomas twenty-seven times—the cases reported being chiefly those in which there was sudden internal hæmorrhage, which terminated fatally from loss of blood, and the existence of ectopic gestation was discovered at the autopsy. In another class of cases met with at long intervals, the tube ruptured and the ovum made its appearance between the folds of the broad ligament. In these the ovum could be easily reached through the vagina, and the symptoms of ectopic gestation were clearly marked. One could feel pulsating vessels in the vagina, and the fluctuations of the tumor. Usually the attention of the physician was drawn to these conditions by the bearing-down pains and paroxysmal pains, by the expulsion of the decidua. I do not suppose there is any one here who has ever tried it, but if one will take the trouble I will show him that in this class with the galvanic current one can arrest the growth of the ovum, and that within forty-eight hours after application the pulsation of the vessels will cease, and the tumor will shrink. I will not say that it will disappear, or that it may not be a good plan later to remove the ovum. I have never seen any dangerous results from delay. It is not often that we discover the dead ovum in the pelvic cavity. I have never seen a case in which the fatal symptoms occurred from death of the ovum. I do not doubt that they may occur, but I think they surely occur rarely. I should not personally hesitate to operate if I was sure of the condition of ectopic gestation. At the same time, in the country, where there are no nurses or assistants operations for extra-uterine pregnancy are not so generally successful, and I would not say that a country practitioner was doing a perfectly absurd and ridiculous thing to use the current to destroy the ovum, and then he might send the case down later to the city to be operated on. Of course, a good many cases of hæmatocele are really cases of extra-uterine pregnancy. These, when opened and drained, rapidly recover, but I have never yet seen one that did not get well with rest when left alone. Every year I meet with a number of them in the

clinic. I show them to the students, and say: "Now, if in this case the sac suppurates, or gives rise to any trouble, or if the bloodclot does not entirely absorb without interference it will be the first one I have witnessed." I had a case upon which I operated three months ago. I suspected extra-uterine pregnancy, but was not certain. I found the tube distended with fluid, filling the pelvic cavity, and firmly adherent to the adjacent pelvic wall. Now, of course, I was not absolutely certain that it might not be a pus sac, and to make sure, I introduced the needle of a small syringe. To my delight I found that the fluid was perfectly clear. I withdrew perhaps an ounce of fluid from the sac. Then, to my surprise and delight, I found, as a result of the partial collapse, the separation of the tube was accomplished without the slightest degree of difficulty. There is a point on which I would like to get some light: Some months ago I had to remove a large ectopic sac. The foetus was dead, but I had a good deal of difficulty in removing the sac. I tied all the supply vessels, and, after removal, introduced a Mikulicz pouch. The patient had in a few hours a very rapid pulse and considerable delirium, but there was no rise of temperature, and no pain, and no abdominal distention. At the end of three days she died, the rapid pulse and the delirium continuing to the end. Am I right in presuming that it was a case of iodoform poisoning?

Dr. H. T. HANKS: I am glad to see the subject brought up again, because two or three of the points made by Dr. Krug are of great interest to us. I will speak of one thing that I positively know, and that Dr. Krug has mentioned, and that is, the symptoms of rupture. I had the satisfaction once of being present when the ovum was expelled from the tube through the fimbriated extremity into the abdominal cavity. I had supposed the woman was pregnant, and was having an abortion. At that time I found she was not aborting into the vagina, but she collapsed, and soon the evidence of internal hæmorrhage showed itself by subjective and objective symptoms, and a diagnosis was made. The operation proved my diagnosis. I wish to say, as emphasizing the point made by Dr. Krug, that when you are present and see these symptoms you will never forget them. I was as certain that woman was aborting as though I had seen the ovum taken from the vagina. An intelligent woman can tell you of that pain which is characteristic of rupture and expulsion of the ovum through the fimbriated extremity.

But all women are not intelligent. It is a very difficult matter for the every-day physician to tell whether his patient is aborting, or whether she has an extra-uterine pregnancy. I have a patient in the Woman's Hospital to-day on whom I purpose to operate to-morrow; I learned to-night that she had three physicians a few weeks ago, and the uterus was curetted for incomplete abortion. It is an extra-uterine pregnancy. The physician does not recognize the symptoms, and he thought he had a normal abortion instead of an extra-uterine rupture. With reference to the question of intravenous injections, I suggested to Dr. Grandin that he should speak on that point. The difference between a fearfully anæmic or bloodless woman, an exsanguinated woman, and simple shock is vast. In one, stop the bleeding and use intravenous injection of saline water. The other treat for shock. The other day I operated on a woman for extra-uterine pregnancy, where the blood tumor was as large as a four-months' pregnant uterus (indicating); she had come all the way from Dakota with this bleeding tumor, and she was fearfully exsanguinated; but there was nothing to be done but to enter the abdominal cavity. There were a half dozen physicians present with me at the time, and they went to work to give saline venous injection while I was operating, and I operated very quickly. They tried to find the median basilic vein, and could not find it, because it had collapsed. They finally decided to do as Dr. Grandin did, and pass the normal salt solution in different places with a hypodermic syringe. She is alive to-day, due to their help. For more than a year I have prepared my patient for operation by giving two or three ounces of brandy, per rectum, an hour or an hour and a half before operation. I have no shock now, as a rule.

Dr. J. E. JANVRIN: This subject of extra-uterine pregnancy and tubal pregnancy brings up so many points that it is pretty difficult to discuss it without going over a very vast field. There are several points, however, which have always interested me very much, indeed, and I brought one up to-night when I presented the specimen which I did, and that is whether we can diagnose these cases before there is an actual, real tear of the tube, or before expulsion of the foetus has taken place through the fimbriated extremity into the uterine cavity. I reported this case of mine as a case of "probable tubal pregnancy." I have no doubt it is that; that case was at about the sixth week. There had been no hæmorrhage

whatever into the abdominal cavity, as far as I could discover at the time of operation. The clot was in the fimbriated end of the tube, and was held very closely by the fimbriæ, just as my fingers would grasp it. Finding the mass at that point when I examined the patient in consultation, and putting that together with the previous history of the case, we diagnosed it as such. Dr. Krug has spoken of the symptoms which take place when bleeding occurs—that is, the shock which the patient goes through at such times. It is a shock—I do not know of any other word which expresses it. It is peculiar. I have seen cases during such time. Dr. Hanks has just reported one in which the foetus was probably extruded into the abdominal cavity. The pain is peculiar; it is agonizing, as a rule, and with it is shock, a pallor, and an inability of the patient to stand on her feet or to move. That is my experience, and it has been corroborated by the history of a great many cases that I have seen and operated upon. I believe that same condition holds true even if we do not have a drop of blood extruded from the fallopian tube into the abdominal cavity. The hæmorrhage into the tube itself, which takes place very suddenly, and, of course, is not a gradual dilatation like the growth of the foetus in the tube—such a hæmorrhage, which takes place into the tube and is confined in the tube and does not find an outlet into the abdominal cavity, will give, I think, almost identically the same symptoms, perhaps not to quite the same degree. I say that in those very cases the shock is so great, and the symptoms so pronounced that I do not think, as a rule, it is difficult for a man who is accustomed to see these things to diagnose them. Of course, it is difficult for a man, who does not see many cases. It is difficult for many men, who see very few cases, to diagnose them in what we may call the *secondary* condition; that is, where a real tear of the tube has taken place, with profuse hæmorrhage, or where the foetus has been excluded through the fimbriated end of the tube. Dr. Lusk has spoken of cases which worked down through the tube, splitting the broad ligament and developing in that way, and he has spoken of a case which he diagnosed, I believe, as such. I have seen some cases of that kind, I believe, but I have rarely been able really to diagnose those as opposed to cases in which the tube itself was distended by the foetus unruptured. It may be done, and for information I would like to ask Dr. Lusk how he would absolutely

distinguish a case of that kind from one in which the tube itself, distended by the growing fœtus, had not ruptured.

Dr. LUSK: One grows up above the pelvic brim, and the other grows down against the vagina.

Dr. JANVRIN: And very frequently we find cases in which the fœtus in the tube has dropped low down and lies directly in contact with, and almost forms a part of, the broad ligament. Still, I do not say it can not be done. My own opinion has been, as everybody knows, that in all these cases where we think we have an extra-uterine pregnancy the thing to do is to operate at once. I believe in that. I have believed in it. I have written half a dozen papers on it during the past eleven years. As I have stated before, if it should not prove to be a case of tubal or extra-uterine pregnancy still we have a mass there which does not belong there. It has got to come out. We ought to deal with it in the best surgical way, and the best surgical method is to remove it, either through the abdominal wall or through the vagina. My own preference has always been to do it through the abdominal wall.

Dr. E. E. TULL: One point brought out by Dr. Krug in regard to symptoms impressed me. I showed a specimen last fall where the ovum, unruptured, had been removed with the fœtus intact, and this case had all the symptoms of rupture, and I certainly thought I had to deal with a hæmatocele. She had been losing a little blood per vaginam. The symptom, menorrhagia, had been almost always present in the cases I have seen, with one exception. In regard to diagnosis, in looking over some cases in the hospital records to-day I find the diagnosis has been as accurate in these cases as with other intra-abdominal diseases. In the past year I have seen five cases at the hospital, and in four of them the diagnosis was made correctly. I saw two cases last year where there was suppuration of the hæmatocele, and it was so extensive that the uterus was removed at the time the hæmatocele was treated.

Dr. JOSEPH BRETTAUER: I would like to correct one statement of Dr. Krug. Those 16,000 were obstetrical cases, and the five cases were meant to be ectopic at full term. Now, to-day, an obstetrician who has at his disposal one of the largest obstetrical clinics in the world, has seen within the last fifteen years not more than seven or eight abdominal pregnancies at full term. I simply mention this to show that we can not compare the number of our diagnosed cases

with the figures given by Bandl. He has also written on collections of blood within the pelvis and shown the frequency of retro-uterine hæmatocele, but he has not said that they were all, or the majority at least, ectopic gestations. The more I see of the condition, the less easy I find it to make a positive diagnosis. It is easy to diagnose extra-uterine pregnancy at the time or a week after it has ruptured. But the longer the time that has passed since rupture, the more difficult it will be to make a distinct diagnosis. I have always followed the lines Dr. Krug laid down for us, and when I hear of a woman who has had irregular menses, and peculiar pains, and so on, in the child-bearing age, especially after an interval of several years of sterility, I am always on the look-out. Only close observation and repeated examinations, if necessary under chloroform, enables me sometimes to go further than the usual *supposed ectopic*, which means nothing, certainly not a positive diagnosis of a pathological condition.

If I have a chance to observe the patient for a week at my own disposal it is different; the additional risk she undergoes is by no means great; if the woman lies in bed and is cared for, there is very little risk of the tube rupturing at that time, if her bowels are kept loose, and we are prepared for it. But at one examination I am unable to make a diagnosis in the majority of cases.

Dr. GRANDIN: At the outset I may say that I am more in sympathy with the remarks of the last speaker than with those of the reader of the evening, as regards diagnosis. It is not more than six weeks ago, before the Obstetrical Section of the Academy, that I spoke as Dr. Brettauer has to-night. The more I see of ectopic gestation, the less I feel that I can make a diagnosis. I agree thoroughly with the reader of the paper that the old symptomatology as laid down in the text-books is thoroughly misleading, and yet if a new system were published to-morrow the old symptomatology would enter into it. The more I see of these women, the less I know that it is ectopic gestation, but the more I know that I have something the matter with that woman which makes it safer to look into her belly than to leave her alone. In other words, I do not make a diagnosis of ectopic gestation, but a diagnosis of tumor at one side or the other or behind the uterus, which is probably ectopic gestation, and if it be not that, is something which ought to come out. The pendulum with me has swung from one extreme to the other, but I learned my lesson from bitter experience. I went

through the electrical period, with determination and with consistency. I was just as honest then in my plea as I have become convinced since that my plea was wrong. I learned my lesson when I opened the belly of a woman who had been treated by electricity and found her full of blood and old clots. That I reported many years ago. Since then I have seen twenty cases, every one operated on and every one well, and in none of the cases was a positive diagnosis made. The assumption was that ectopic gestation was present. I have not found that the symptom of pain is invariably present. I have found in two, and possibly three women, ectopic gestation where there has been very little pain. The one symptom I have found always present has been the one Dr. Krug has laid stress on, and that is irregular hæmorrhage, with symptoms suggestive of pregnancy. There are two points I would like the reader of the paper to refer to in closing: (1) Is it wise not to drain these cases? When I refer to drainage, I do not mean the old up-hill method of inserting a stand-pipe, and expecting the water to flow to the top, but the newer method of draining according to the way you would drain a meadow, by having a canal to a lower level; that is, to the vagina. Is it wise, or not? (2) Is it wise to protract the operation in order to get out all the clots, on the principle of a diseased tube having been present? My own feeling, as the result of my limited experience, is that it is wiser to drain these cases, and that it is wiser to spend perhaps an additional ten to fifteen minutes in an attempt to thoroughly cleanse the abdominal cavity, and I am not afraid of the extra time involved provided I irrigate, as I always do in these cases, the abdominal cavity with hot salt water from beginning to end. (3) Are these cases suitable for operation by the vagina where the intention is not to take out the entire uterus? In my experience, where the other side is fairly healthy the diseased tube has usually contracted adhesions pretty high, and I question very much whether there is that degree of safety attending the vaginal operation which attends the abdominal operation.

Dr. G. T. HARRISON: In regard to the 'question of diagnosis, I agree heartily with the doctrines laid down by Dr. Lusk and several other speakers as to the difficulty of differential diagnosis. I am on record as having made a mistake, and several gentlemen here present heard me report the case at the Woman's Hospital Society at one of their meetings, a case in which I made a mistaken

diagnosis and operated for extra-uterine gestation, and found that instead of that I had a normal pregnancy. I mention this to show that sometimes it is exceedingly difficult to make a diagnosis of ectopic gestation, even where rupture has not taken place. In the majority of cases we can be pretty sure, where we see the woman before rupture has taken place. The tumor is generally characteristic; it has a soft, elastic feel which we all know, and from the history of the case we can generally make a diagnosis. In regard to treatment, I am disposed to take the conservative stand of Dr. Lusk. I think if you are called to see a case of ectopic gestation before rupture has taken place, and you diagnosticate it, undoubtedly the indications are plain: it ought to be removed. But supposing rupture has taken place—what are the indications then? Not necessarily to open the abdomen and go in under all circumstances. If you find that hæmorrhage has taken place into a closed cavity, into a cavity shut off by adhesion, I do not think in that case the indications are to operate. But where hæmorrhage takes place into the free, abdominal cavity, the indications are to perform laparotomy and remove the fruit sac.

Dr. KRUG (in closing): I find myself almost entirely in accord with the speakers, even the first and the last one. I fully agree with Dr. Harrison that in these cases where the rupture has taken place, where hæmatocele has formed and no active hæmorrhage is going on, that there is no indication for an operation. You can empty those cases by making an incision from the vagina into that hæmatocele and letting out the blood, and in the majority of cases there will be, if not an absolute, at least a symptomatic cure. As to diagnosis, I will say that I seem to have been a little misunderstood. I have had more luck than some of the speakers. I defy any man to say that he can say in those cases with absolute positiveness that it is ectopic gestation, but I must say that in all those cases where I have made a positive diagnosis of ectopic gestation I have very rarely been mistaken. On the other hand, I will say that once in a while I have diagnosed an ectopic gestation, and found it was something else, but in all cases, an indication for abdominal incision was strictly given, and the removal of what was present. It has never occurred to me that the ectopic has escaped me, and that I have made a diagnosis of something else, and discovered afterward that it was an ectopic gestation. Not wishing to enlarge the subject, I have not mentioned the paper I read before the Society on Hyster-

ectomy for Ectopic Gestation with Disease of the other Appendages. I was brought up when the teaching was ectopic gestation; cessation of menses; rupture. In the first place, it was called rupture into the broad ligament; second, into the abdominal cavity. The thing reads like a novel, but when you come to look at it you will find it is different. Now, what I was taught to take for the hæmorrhage into the broad ligament I have felt many times since. I want to emphasize the fact that I do not advocate the performing of the operation when you can easily reach the thing, when it is shut off from the abdominal cavity, when you can not expect to find the foetus any more, when you simply have a hæmatocele which will heal up by nature's own help. I have seen those things, but they are intra-peritonæal. I have never seen an extra-peritonæal hæmorrhage, a hæmorrhage into the broad ligament, excepting from rupture of the uterus during child-birth, and those are very rare cases. As to Dr. Grandin's questions, I would remove as much of the clots as I thought I could without using too much time. I would not drain with iodoform gauze, because it is absorbed. What you want is sterilized gauze, packed there, but those are exceptional cases. There is no rule that you can lay down to fit every case. It has got to be left to the individual judgment of the operator what he wants to do in a given case. I am glad to see that the consensus of opinion has changed so much in comparatively few years, and that we do not have to discuss so much about electricity, morphine, and other things.

Official Transactions.

A. M. JACOBUS, *Secretary*.

TRANSACTIONS OF THE AMERICAN GYNÆCOLOGICAL SOCIETY.

(Continued.)

Second Day, May 5, 1897.

Some Pathognomonic Physical Signs of Chronic Gonorrhœal Infection in Women, and Their Value in the Diagnosis of Pelvic Disease.

BY A. PALMER DUDLEY, M.D., New York.

(See page 133.)

DISCUSSION.

Dr. H. J. GARRIGUES: Not long ago I published an article, "Protection for the Future Wife and Children," in which my aim was to point out to the general practitioner that gonorrhœa in women is one of the most serious diseases, and one most difficult to cure, and that it is of the greatest importance that it should be avoided. Of course, the ideal way of avoiding it would be chastity, but we can hardly expect this. We can, however, appeal to the men, and tell them that if they can not or will not control their passions, they should make use of the inventions which have been devised for their protection. It is terrible to think of the many young women who lose their lives or are unsexed by an operation which is made necessary by the fault of the husband. I have had the moral courage to say this and put it in print, and it is the duty of other physicians to do the same.

Dr. WOODS HUTCHINSON of Buffalo (present by invitation): The most terrible result of gonorrhœa, and one which is a menace to the race, is sterility, but it is a mistake to think that this falls upon the female alone. It would be unjust if it did. Bacteriologists tell us that the man undergoes the same sterilization as the woman. Education and education only will cause men to avoid the disease.

Dr. WILLIAM E. ASHTON of Philadelphia: I agree with the

gentleman who has just spoken that education alone will make men avoid the disease. It is useless to appeal to a man's moral nature, but tell him of the terrible results of gonorrhœa, teach him that it is to his own *interest* that he avoid the disease, and he will avoid it. Self-interest is the only way in which he can be reached.

Dr. A. P. DUDLEY (in closing): I am satisfied with the result of the discussion. My paper referred to cases in which gonorrhœa could be recognized if we try to recognize it. When we do find one or more of the signs I have mentioned,* the woman should not be allowed to go home and treat herself by taking douches, but the physician should take hold of the case, and, if possible, limit the progress of the disease. This is the point I wished to bring out and to show the value of the ten points of diagnosis. When these signs are found, the case should be treated heroically. I also wished to call attention to the changes in the sexual organs of women as a result of gonorrhœa, and to point out the importance of microscopical examination of pus and discharges in making the diagnosis. The husband's history should also be looked into. Only last Sunday I aspirated a lot of pus from the left side of a young woman, which, upon microscopical examination, showed the presence of gonococci. The woman had several still-births. I took the husband aside and said to him, "When did you have gonorrhœa?" At first he flatly denied having had it, but when I told him that gonococci had been found in the pus removed from his wife's pelvis, and that her condition was due to this disease, he confessed that he had had the disease several times.

(To be continued.)

ABSTRACTS.

STATUS OF GYNÆCOLOGY ABROAD.

AUSTRALASIA.

Precocious Menstruation.

Dr. F. J. CLENDINNEN (*Intercolonial Medical Journal*) reports the following case, with skiagram demonstrating premature osseous development: The patient is now eight years and ten months. The mother states that the child began to menstruate between the ages of three and four years, and has been regular every month, with the exception of two, ever since. The menses last three days, and two diapers are used daily. Height, 4 feet 8½ inches; weight, 81 pounds. She looks like a child of eleven or twelve years. Her breasts are developed as fully as those of a girl of seventeen or eighteen. Hair on pubis is fully developed, and also that of the axillæ *Osseous Development*: By the skiagram it is shown that the proximal epiphyses of the phalanges, and the distal ones of the metacarpal bones are all completely united to the shafts and the ossification of the carpal bones is complete, as is also the sesamoid bone. There is a faint trace of the epiphyseal line at the proximal end of the thumb metacarpal, and the lower epiphysis of the radius is united on its outer side. The appearances are just those seen in the skiagram of the hand of a female eighteen years of age.

Suppurating Hydatids of the Omentum, causing Acute Intestinal Obstruction.

Dr. R. A. STIRLING (*Intercolonial Medical Journal*, May 20, 1877,) reports the following case: A patient of twenty, of fairly good health, two years ago had coughed up a quantity of bright red blood suddenly and without apparent reason, but did not notice any "skins" (daughter cysts) in the expectoration. Two days before admission to the hospital the patient awoke in great pain, and for the first time noticed a swelling in the epigastric region, which became rapidly larger, and just beneath it was a smaller swelling which gave a tympanic note. The bowels had not moved for four days, and the constipation was absolute and complete. The patient en-

tered the hospital in a condition of collapse in great pain, and seemed so ill that it was thought that she would die before operative means could be resorted to. Reaction was brought about to some extent by stimulants, etc., but all efforts to move the bowels failed.

An incision was made upon the presenting tumor in the epigastrium, and it was found to be a suppurating hyatid cyst of large dimensions stuffed full of daughter cysts. It was not adherent to the peritonæum. An attempt was made to suture the cyst wall to the edges of the incision, but it was too friable. The cyst was then brought out of the cavity as much as possible, and emptied, and its edges united to the skin incision. Lower down, and to the right of the umbilicus, another very large and suppurating cyst was found, and also not adherent to the peritonæum. This cyst had compressed the upper part of the ascending colon and hepatic flexure so completely as absolutely to block the bowel. This was treated in the same manner as the other cyst.

The bowels moved after a purgative enema the same evening, and recovery was uneventful.

The points of interest in this case are:

1. The rapidity of the inflammatory process, when once it had started, by the introduction in some way of pus cocci among the daughter cysts.
2. The absence of adhesions.
3. The absolute obstruction of the bowels, neither flatus nor fæces passing.
4. The absence of endocysts, and the complete peritonæal movement of the cysts.

(G. H. MALLETT.)

OBSTETRICS.

FRANCE.

Typhoid Fever in Pregnancy.

Dr. CHAMBRELENT (*Journal de Med. de Bordeaux*, May 23 and 30, 1897.) before the Obstetrical Clinic of the Faculty of Medicine, November 18, 1897, reported a case of typhoid fever attacking a woman in the eighth month of gestation, in which he was able to follow the course of the disease during parturition and the puerperium; and to study its influence, not only in the mother but also on the child, born alive, and transferred immediately to the Hospital for

Children under the care of Dr. R. Saint Philippe, in whose ward it was placed. This case was one of double interest:

1. The influence of typhoid fever on pregnancy, parturition, and the puerperium.

2. Its secondary action on the child.

History.—The mother entered the Hospital St. André August 28, 1896, in about the sixth month of her gestation, as a waiting patient. For lack of accommodation she was placed in a medical ward. October 24, she complained of general discomfort and febrile condition; five days later, October 29, she was attacked with labor pains, now in her eighth month, and transferred to an obstetrical ward, where she was delivered the same day, spontaneously, of a living female child, weighing 2210 grammes. The delivery was natural in all respects; her temperature, however, arose immediately afterward to 39° C. She was isolated, and the child sent to the children's hospital, as already stated. The mother's temperature rose to 40° C., her tongue was dry, abdomen slightly tympanitic, and great prostration was present; no rash found. The uterus was well contracted, and free from tenderness, the lochia normal. Typhoid fever was suspected. Widal's serum test was made, and the agglutinating property of her blood on Eberth's bacilli was very marked, proving the case to be typhoid fever. Her temperature remained very high until November 5, when it began to decline, until recovery. The puerperium did not appear to be influenced by the course of the fever, uterus involution was regular, and the lochia normal, and ceased on the tenth day. Nor could any influence be noticed of the puerperal state on the course of the typhoid fever. This appears to be the general rule by all authors. In 183 cases of typhoid fever occurring during pregnancy collected by Vinay, only 32 cases of death of the mother occurred (17 per cent.), which does not differ from the normal mortality of typhoid fever.

Typhoid fever, however, exerts a decided influence on the *duration* of pregnancy. In the above case the patient was delivered in the eighth month. In the great majority of cases pregnancy is interrupted. Statistics show that it occurs in about two-thirds of such cases. Sacqui reports of 310 cases of typhoid fever in pregnant women that 200 aborted in consequence of the disease. As to the cause of premature delivery in the presence of typhoid fever, it is probably multiple as in every infection. The infection itself may

reach the fœtus, and so cause its expulsion, or the action of the toxins on the uterus stimulate contractibility of that organ. In general it may be said that the interruption of pregnancy is in direct relation to the gravity of the disease but, in the opinion of the writer, not enough regard has been paid to uterine susceptibility to abortion in individual cases. For serious typhoid fever it may have no influence on the uterus, while very mild cases of the fever are attended with abortion. The case reported appears to belong to the other class; subsequent inquiry shows that the woman had already suffered from several hæmorrhages, which indicate a tendency to abortion. Vinay cites a case of Karker's, where a woman pregnant in the fourth month contracted severe typhoid fever, complicated by an intense bronchitis; later on the 34th day by a perityphlitis, on the 41st day by a thrombosis of the saphenous vein, on the 42d day by catarrhal jaundice, with violent diarrhœa, and finally on the 56th day, by a croupous pneumonia. The typhoid fever lasted 140 days, and in spite of all this the woman was delivered at term. The writer saw in consultation, a year ago, a young woman who, during the early part of her gestation, contracted a severe typhoid fever, during which her temperature ranged for thirty days about 40° C. The disease was later on complicated by pyelonephritis, but in spite of this, gestation followed a regular course, delivery occurring at the eighth month, after the complete recovery of the mother from the fever. Finally typhoid fever may cause the death of the mother without interrupting gestation. Grisselle and Etienne (of Nancy) each report such a case. Our prognosis in cases of typhoid fever occurring in pregnant woman should therefore be guarded; while the probability of abortion is great, it is not unavoidable. We should consider largely the patient's susceptibility to uterine contraction. We daily see women in whom the slightest trouble will interrupt the course of pregnancy, while in others the greatest troubles, severe traumatisms, have no retro-active action on the uterus. Only in this way can we account for the fact that a serious or even fatal typhoid fever in the latter class should not cause abortion, while a very mild attack of the fever in a woman susceptible to abortion will bring about such an accident. If parturition occurs unexpectedly during the course of the disease, we are justified in fearing hæmorrhages or even sudden death. Nevertheless complications are rare. Statistics do not show

a death at the time of labor in women suffering from typhoid fever, nor does the pyrexia appear to influence the puerperium.

The influence of typhoid fever in the mother on the product of conception. Charcollay, in 1840, found lesions in Peyer's patches and some of Brunner's glands at the autopsy of an infant which died on the eighth day after its birth, but does not say that the mother had typhoid fever. Mangini, in 1841, found lesions of typhoid fever in the intestine of a foetus of eight months, which died a few hours after birth. It was not until the discovery of Eberth's bacillus in 1884 that the possibility of infection of a foetus in utero from its mother, suffering from typhoid fever, could be established.

The first positive observation of the typhoid bacilli passing through the placenta of a woman sick with typhoid fever to her foetus was that noted by Rebecq in 1885. A foetus of six months, expelled by the mother on the nineteenth day of her fever, showed no intestinal typhoid lesions, or increase in size of the spleen; yet cultures made with elements taken from the liver and spleen of the foetus in gestation gave typhoid bacilli. Neuhaus, in 1886, reports the case of a foetus of about five months' gestation expelled by a woman during the fifth week of typhoid fever, which showed typhoid bacilli in gelatine culture, with elements taken from the liver, spleen, kidneys and brain of foetus, yet no typhoid lesions could be found in the intestines. These authors add that they have found by experiments on pregnant guinea-pigs inoculated with typhoid bacilli, the amniotic fluid and organs of their foetuses, typhoid bacilli.

Eberth, in 1889, investigated this subject with great care, as he entertained doubts upon it. A foetus (age not given) was expelled at the end of the third week of typhoid fever in the mother; it was still contained in the closed ovum; the amniotic liquid was clear. With great antiseptic precautions, portions of the foetus and its blood taken from the heart were used for culture, and presented the secretions of typhoid bacilli. A check series of tests were made on foetuses from mothers who did not have typhoid fever; these proved to be free from the typhoid bacilli secretion. On the other hand, as in pneumonia in the mother, the foetus may fail to show the presence of pneumococci, so in some cases of typhoid fever in the mother the foetus may fail to show the presence of Eberth's bacillus. Fraenkel and Kiderlen report observations of a woman who died of typhoid fever, and where the autopsy confirmed the diagnosis; on

the seventeenth day of the disease she aborted a living foetus of about five months which died a few minutes after its expulsion. Many preparations were made on plates with placental ovum, the heart-blood of the foetus, parenchyma of the spleen, and colored with fuchsin, with no trace of bacteria. Culture of the placenta, foetal blood and various organs were made with agar-agar and gelatine without finding any typhoid bacilli.

History of the child, prematurely delivered by the woman suffering with typhoid fever, reported by the writer: After its transference to the Children's Hospital it was placed in an incubator, as it was feeble. It soon became jaundiced (its liver very large), would not take nourishment, and had to be fed through a conductor. Five days after birth it had lost 240 grammes in weight; its breathing was difficult from bronchial catarrh. In view of this condition, a drop of blood was taken from its arm, and the Widal serum test made. The reaction was very marked. This seemed to indicate that the child also had typhoid fever, which with its low typhoid state was conclusive. While the mother's condition grew worse each day after the delivery, the child's state improved. November 15, seventeen days after birth, the blood of both mother and child were again submitted to Widal's test. While the mother's blood, taken at the twenty-fifth day of her fever, gave pronounced reaction to Widal's test, that of the child, then eighteen days old, gave a greatly diminished reaction. Therefore, this child was doubtless infected through the placenta from its mother, but this infection must have been either attenuated, or the child could react better against the infection than its mother. Widal has already proved experimentally in guinea-pigs and rabbits the agglutinating property of the blood of their new-born. But until lately researches in women in this regard has proved negative. Etienne very recently showed that in a case where the mother died of typhoid fever without abortion the foetus was free from Eberth's bacilli, and its blood did not react by Widal's test, while its mother's blood did react immediately. A few days since Charrier and Appert report the case of a three-months' foetus expelled by its mother sick with typhoid fever, in which, by the most careful and painstaking methods, no trace of Eberth's bacilli could be found or any reaction to Widal's test. From this it is clear that the fluids of the foetus do not always show the agglutinant reaction. It is probable that this property is the same

with the infection itself, which may exist or not in the foetus of a mother attacked with typhoid fever. When this infection exists it may kill the foetus, and in that case it is expelled. Or the infection may be less severe, and the mother abort either during her fever or convalescence of a living but more or less diseased child. Though it may be saved, yet it may have received injuries which it may possibly retain in the future.

Certain cases indicate that children born under such conditions presented later on pathological troubles which might be referred to the maternal disease. Corbin reports the cure of a girl twelve years old, who was unable to pronounce certain words, confounding different words. The child was born while the mother was sick with typhoid fever. The parents were in good health and sound in mind, with an excellent family history; three other children by them were well and intelligent. This girl's mental trouble evidently bore some relation to her mother's state at the time of her birth. But fortunately such cases are very rare.

Finally, in foetal pregnancies in cases of typhoid fever complicating pregnancy, we should not be too pessimistic, remembering that it is quite possible that gestation may reach the complete term and the child be born alive and healthy.

GERMANY.

A New Incision in the Cæsarean Operation.

HEINRICH FRITSCH (*Central. f. Gyn.*, May 22, 1897,) says that while an autopsy upon a woman who died late in pregnancy, the uterus having been opened by a transverse incision above the fundus in order to obtain a view of the internal os uteri, he was impressed by the ease with which the foetus could be extracted, and by the smallness of the incision, and the freedom of the oviducts from injury, and determined to adopt the method upon the next opportunity. An opportunity soon occurred for conservative Cæsarean operation in a married woman, and proved that this incision obtained great advantages. The abdominal incision can be made higher up in the abdomen so that the umbilicus can occupy its center. This lessens the danger of subsequent hernia, and affords a better opportunity for the assistant to compress the uterus, as it is undisturbed in position; the blood did not reach the abdominal cav-

ity, but flowed outward. The cleanliness of the operation was surprising. Though the placenta was touched by the incision the hæmorrhage was very slight, as soon as the large placental sinuses had been emptied the bleeding stopped without compression of the cervix. After detaching the placenta the legs of the foetus were in reach, and the child removed with ease. The most striking feature was the rapid contraction of the wound by the contraction of the fundus. The incision, about eight centimeters in length, requires but seven sutures applied closely. The hæmorrhage ceased at once on their introduction. This transverse incision at the fundus is parallel to the vessels. Therefore, the sutures will ligate the vessels, while in a longitudinal incision the sutures are parallel with the vessels; this accounts for the easy control of bleeding by the suture in the method above described. The operation lasted twenty-one minutes in all.

(T. W. CLEVELAND, New York.)

PÆDIATRICS.

UNITED STATES.

Arsenical Neuritis, with Report of a Case Occurring in a Lad of Five Years.

A. STENGEL (*Archiv. of Ped.*, March, 1897,) says that at least in the great majority of cases the sole lesion of arsenical paralysis is a neuritis of the peripheral nerves, those of the extremities, especially of the legs, being most often involved; often the arms and legs are affected together, and the disease is usually symmetrical. Generally there are sensory as well as motor symptoms, at the beginning pains in the limbs and sometimes in the joints, and later, instead of pain, paræsthesia and anæsthesia. Muscular weakness develops and finally paralysis with atrophy, the reaction of degeneration, and, almost always, loss of reflexes. Arsenical neuritis may follow the slow poisoning by dust from articles colored with arsenic dyes, or occur after single large doses. It is comparatively seldom the result of arsenic eating or of the medicinal use of the drug. The following case occurred in a boy five years old to whom Fowler's solution had been administered for chorea. The boy had always been of a neurotic temperament, but the chorea came on without discoverable cause. Examination (July 29th), two weeks after the attack

began, showed that the reflexes were increased on the right side; the left side was paretic but moved slightly; on the right side there were constant choreic movements, increased by volitional efforts but quiet during sleep; there was no spinal tenderness. Fowler's solution was ordered in three-drop doses, to be increased. August 20th, he was taking three ten-drop doses daily, when toxic symptoms were noted, and the drug was discontinued. By September 9th he had little or no twitching, but did not use the right foot properly, and on September 23d it was noted that he dragged and threw his feet in a way suggestive of poliomyelitis or neuritis; the knee-jerks were active, and at times there were pains in the legs. He fell frequently and walked with difficulty. October 1st, examination showed an extremely ataxic gait, poor station, and exaggerated knee-jerks; but sensation was good, there was no ankle clonus, pain or tenderness; there was slight atrophy. At the end of two months there had been a slight improvement in walking and standing, but the chorea began again; quinine was given without much effect, but the patient became quieter under bromide. On January 5th, the chorea had markedly improved, but the gait was still tottering and the station poor. The extensors of the legs and feet gave no response to the faradic current; very slight responses were obtained in the quadriceps and in the flexors of the foot, leg, and thigh. There was some atrophy of the legs. Sensation, skin reflexes, and knee-jerks were preserved, the last at times exaggerated.

In diagnosing this case, the disease most important to exclude was acute anterior poliomyelitis, the chief symptoms favoring such a diagnosis being the preservation of skin sensation, and the persistence of the paralysis; but these peculiarities have both been noted a number of times in arsenical neuritis; while the symmetrical character of the paralysis, the absence of decided wasting, the preservation of the reflexes (which would almost certainly have been lost in infantile palsy), the ataxic gait, and disturbance of station all point to a neuritis.

Such an occurrence following the medicinal use of the drug, even in large doses, is very rare. It is hardly possible to draw any useful deductions regarding dosage, many cases giving no signs of neuritis after large doses, while others have showed suggestive symptoms or a well-developed neuritis after small or moderate doses. It seems likely that with moderate or large doses elimination does not

keep pace with administration; so that it is wise to discontinue the remedy for a short period from time to time.

The Ætiology of Diarrhœa in Young Children.

OLIVER J. D. HUGHES (*Atlantic Med. Weekly*, June 26, 1897.) enumerates the principal causes assigned for summer diarrhœa as follows: Heat, with improper feeding; fermentation, with improper feeding; bacteria, it being even claimed by some that specific germs exist; exposure to cold and damp; and possibly predisposition and heredity. Improper food alone is not sufficient; it will cause vomiting and purging, but with the removal of the cause the trouble very often vanishes without initiating a regular summer diarrhœa; on the other hand, such an attack will often in warm weather date from the ingestion of unsuitable food, so that we must regard such food as producing conditions favorable to the development of the disease. It is claimed by the exponents of the germ theory that even continuous bad feeding will do no more than help to develop the specific germ of the disease; and we must admit that many ill-fed infants only become feeble and puny without developing diarrhœas; on the other hand, breast-fed children are not exempt from the disease. Whether heat is the the real cause or not, there is no doubt that the disease is produced under the influence of continuous warmth. Meinhert urges that summer diarrhœa is really nothing but heat-stroke; he does not distinguish between insolation and simple heat collapse, but must have in mind the latter, since diarrhœa is not a symptom of the form characterized by coma and hyperpyrexia. Another contributory condition is crowding, which will aggravate any disease. The clinical symptoms in many cases admit of no other explanation than that they are toxic effects of absorption from the intestines of ptomaines produced by bacteria. These symptoms are the high temperatures without discoverable inflammatory lesions; profound nervous symptoms without brain lesions, often subsiding with the discharge of the intestinal contents; and the great production of offensive intestinal gases. We know that bacteria can produce similar lesions in the intestine to those found in some inflammatory diarrhœas of infancy, *i. e.*, the bacillus of typhoid fever and the bacillus tuberculosis; and epidemic cholera, clinically allied to cholera infantum, is certainly due to the comma bacillus. We also know that the ptomaines of milk, ice cream, etc., can produce se-

rious gastro-intestinal attacks. So, although we do not yet know the kind of bacteria that produce infantile diarrhœas nor how they work, it is evident that they play an important ætiological part; and apparently milk, water and air are the offending media. Undigested food or a milk attack of intestinal catarrh may certainly furnish the favoring conditions for the work of the bacteria. The best defense against these diseases is healthy digestion and perfect absorption.

Exencephalia and Supplemental Sac.

I. MILLER (*New York Med. Jour.*, May 1, 1897), describes the following case seen in consultation: When he was summoned the woman, a primipara, had been in labor about twenty-four hours; the presenting membranes had been ruptured some time previously by the attending physician with the escape of about a pint of liquor amnii, when a dense, hard tumor presented at the os; no other abnormality was noticeable except the pronounced size and roundness of the woman's abdomen. It was thought that the tumor might be a hydrocephalic head; the membranes were ruptured with the escape of two gallons of fluid; a foot was caught and a fœtus extracted that had both cerebral hemispheres lacking, and an open spinal canal from the fourth dorsal to the first lumbar vertebra; there was no other abnormality, and death had evidently just occurred. The weight was nine pounds. The author also reports a case of hypospadias that was apparently a female; inspection, however, showed that the two labia represented a split scrotum, the fissure being covered with mucous membrane and each labium containing a testicle; of the penis only the glans was present, the urethra opening below; the child, now eight years old, is otherwise normal.

Another case is described in which the abdominal wall was deficient over an area about three inches in diameter in each direction, exposing the colon, small intestine, bladder and large parts of the stomach and left lobe of the liver; in fact, these organs had to be replaced after delivery. The edges of the opening could not be brought together, so the viscera were simply kept covered with wet boric acid gauze. Although very hot weather, the child lived a week, nursing and having normal stools; at the end of that time it died, apparently of inanition.

(A. D. CHAFFEE, New York.)

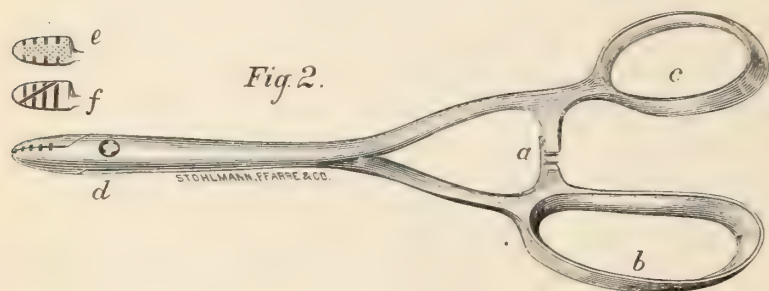
NEW INSTRUMENTS.

Scissors-Handled Needle-Holder for a Curved, a Hagedorn or a Straight Needle.

BY HORACE TRACY HANKS, M.D., NEW YORK.

The all-around surgeon requires a needle-holder which will firmly grasp, and as readily let loose, any of the needles in common use to-day.

This holder is about seven inches in length. It is strong, is easily and quickly closed, and as easily and quickly opened as any hæmostatic forceps. In closing, it locks like the traction, or



pressure forceps. The handles are not similar, but, like the ordinary scissors, have one large ring (*b*), for two or three fingers, and a smaller ring (*c*) for the thumb, thus enabling the operator to always grasp the forceps in the same way, and giving better leverage.

The jaws (*e f*) are somewhat long, allowing for three or four distinct grooves of different width, similar to the McBurney needle-holder. On the lower jaw (*f*), however, when the holder is held sufficiently open, can be plainly seen three grooves passing directly across it, and one groove diagonally—the smallest groove near the distal end, the middle one larger, and the largest one nearest the rivet (*a*). This lower jaw is smooth except for these one diagonal and three cross-grooves. The upper jaw (*e*) is ground rough like a file, excepting the notches on the edges. These notches correspond with the grooves on lower jaw, but do not pass entirely across this

jaw, but are at the edge of the jaw. This construction allows the full-curved needle to be held in the center of the groove of the lower jaw, while the short notches in the outer edge of the upper jaw (*e*) hold the full-curved needle firmly at these points.

In other words, the grooves are so arranged as to hold tightly a full-curved, or a straight, or a flat Hagedorn needle. The jaws are so ground as to hold absolutely tight a large or small straight needle, without the necessity of placing it carefully in the groove first.

The advantages claimed for this needle-holder are:

1. It combines all the advantages of the common needle-holder, and of the Hagedorn needle-holder.
2. It is strong and simple.
3. It is easily manipulated, opening and closing like the common traction or pressure forceps; therefore, there is nothing new to learn about the catch.
4. It holds tightly flat or round, large or small, full-curved or straight needles at any angle desired.

It is made by Stohlmann, Pfarre & Co., 107 East Twenty-eighth Street.

A Convenient, Durable, Portable Ligature-Box.

Dr. HANKS describes another new instrument of his in the following words: This ligature-holder consists of a light metal box, varying in size according as one desires it, to contain four or more large or small spools. A convenient size is six inches long and two inches wide, and two inches high. This will carry four spools one and one-half inches long, and one and one-fourth inches high.

The box (*A*) is made extra firm at the top where the cover (*B*) shuts down over it. There is a properly-made groove (*C*), where the rubber packing is placed, which makes the box air-tight with a moderate pressure.

Each spool (*E*) is held in a movable, independent house. One spool and its separate house (*D*) has been removed, as represented in the cut, from its position in the box. Each spool rests in the proper position in the box, and is held *in situ* by its axle, a small, easily-removed screw. One open slot is for the thread or catgut to be drawn through. The other openings are to allow light to enter the house, that the amount of ligature material remaining on each spool may be quickly determined.

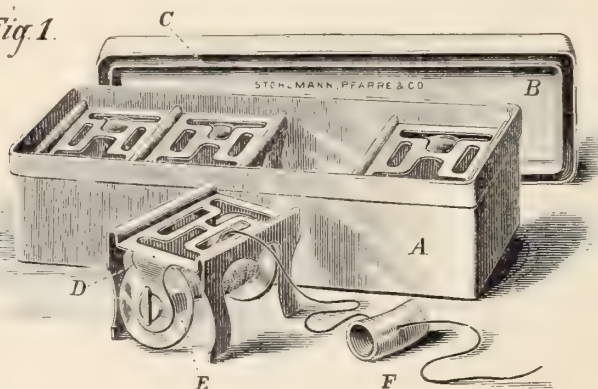
Each ligature should be passed through a piece of rubber tubing (F), as seen in the cut. This prevents the end of the ligature material from dropping back into its compartment after cutting off the amount required.

The cover is held firmly *in situ* by a few feet of small, strong rubber tubing, which is to be wound firmly around the box after the cover has been once placed in position.

The absolute alcohol, in which the catgut ligature should always be kept, does not spill out when this rubber tubing is tightly drawn about the box, even though the box may be turned on its side in the surgeon's bag.

When the ligature material is to be sterilized for the first time, after having soaked it in ether for a day, wind it on the spools, and

Fig. 1.



place them in position; then fill the box with fresh absolute alcohol, cover it, and fasten the cover on by means of the rubber bands or tubing, and place it in a dry compartment of a sterilizer, over boiling water, and allow it to remain surrounded by boiling water for five hours.

To re-sterilize, the catgut needs to be boiled in absolute alcohol but one hour.

Advantages.—The box is small, strong, and portable, convenient and inexpensive.

It is made by Stohlmann, Pfarre & Co., 107 East Twenty-eighth Street.

ITEM OF INTEREST.

BRITISH MEDICAL ASSOCIATION (CANADIAN BRANCH.)

Sixty-seventh Annual Meeting, August 30 to September 4, 1897.

Section of Obstetrics and Gynæcology.

The following papers have been promised:

1. Dr. T. MORE MADDEN. Dublin. "On Some Points in Modern Treatment of Tedious Labor, with Description of a New Traction Forceps."
2. Dr. T. MORE MADDEN. Dublin. "On the Conservative Treatment of Fallopian Tube Disease."
3. Dr. JOHN CAMPBELL. Belfast. "Labor Complicated by Abnormalities of the Cervix Uteri and Vagina."
4. Prof. MAYO ROBSON. Leeds. "Porro's Operation for Pelvic Tumors, Complicating Pregnancy."
5. Dr. BERRY HART. Edinburgh. "The Pathology and Treatment of Chronic Non-Suppurative Conditions of the Uterus and Appendages."
6. Dr. J. INGLIS PARSONS. London. "A New Method of Treatment of Prolapse of the Uterus."
7. Dr. PAUL F. MUNDE. New York. "On Pelvic Abscess."
8. Dr. H. J. GARRIGUES. New York. "The Treatment of Abortion."
9. Dr. FERNAND HENROTIN. Chicago. "The Operation of Choice in the Surgical Treatment of Septic Pelvic Diseases, with Special Reference to the Early Vaginal Incision."
10. Dr. HOWARD A. KELLY. Baltimore. "Conservative Treatment of the Ovary."
11. Dr. WINSLOW ANDERSON. San Francisco. "Uterine Fibroids."
13. Dr. THOMAS S. CULLEN. Baltimore. "The Value of the Microscope in the Early Diagnosis of Cancer of the Uterus."
14. Dr. JAMES F. W. ROSS. Toronto. "The Diagnosis and Treatment of Intrapelvic Tubercular Disease."

15. Dr. A. LAPHORN SMITH. Montreal. "The Diagnosis and Treatment of Retroversion of the Uterus, with Special Reference to Ventrofixation."

16. Dr. T. JOHNSON ALLOWAY. Montreal. "Gauze Packing in Pelvic Surgery."

17. Dr. HENRY C. COE. New York. Title not announced.

There will be three discussions, as follows:

1. "Hyperemesis Gravidarum." Introduced by Dr. J. Algernon Temple, of Toronto.

2. "The Abdominal vs. the Vaginal Route in Dealing with Inflammatory Conditions and Tumors in the Pelvis." Introduced by Mr. Lawson Tait, of Birmingham.

3. "The Palliative and Radical Treatment of Uterine Flexions and Displacements."

THE AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL.

SEPTEMBER, 1897

GYNÆCOLOGY AT BELLEVUE HOSPITAL.*

BY WM. T. LUSK, M.D., NEW YORK.

The title of this paper requires a word of explanation. The report is limited to cases in which the peritonæal cavity was opened. No deaths have occurred in the work handed down to us by Sims and Emmet. I have not included in these statistics cases of anterior vaginal fixation of the uterus, nor cases of nephorrhaphy, as these only technically belong in the category under consideration.

The whole number of cases reported is 105. They extend from January, 1894, to date (April 22, 1897). Twenty-nine were performed by Dr. A. Flint, Jr. Seven patients died. The matter of accidents in statistics is illustrated by the fact that with ninety-four cases there were four deaths. Then three fatal cases occurred in rapid succession.

It is the fatal cases to which I wish to draw your attention. It seems to me that a certain amount of instruction is derivable from a recital of these, and from your criticisms I shall hope to learn measures by which the mortality of the Bellevue Hospital Clinic may be still further diminished.

In detail the 105 cases were:

	Cases. Deaths.	
Removal of one tube and ovary by cœliotomy.....	21	1
Removal of both tubes and ovaries by cœliotomy.....	23	2
(2 with enucleations of fibroids.)		
Removal of both tubes and ovaries per vaginam.....	4	0

* Read before the New York Obstetrical Society, May 4, 1897.

	Cases.	Deaths.
Operation for cure of ventral hernia.....	13	1
(1 case complicated with fibroids of uterus.)		
Anterior fixation of the uterus for retroversion.....	10	0
Extra-uterine pregnancy.....	9	2
Ovarian cysts.....	6	0
(4 multiloculars, 1 dermoid, 1 twisted pedicle—strangulated.)		
Abdominal hysterectomies.....	5	1
(3 uterine fibromata—1 with suppurating sac, fatal; 2 sarcomatous.)		
Vaginal hysterectomies.....	6	0
(1 for fibromata, 4 for carcinoma, 1 for double pyosalpinx.)		
Exploratory cœliotomies.....	8	0
(3 collections of fluid circumscribed by adherent intestines, 3 cases of ascites due to tubercular peritonitis, 2 cases of sarcoma of uterus and intestines.)		

Case I. *Extra-uterine Pregnancy—Removal of Sac. Death After Four Days.*

Annie R., aged twenty-five; single; entered hospital February 18, 1895.

The history of this patient is very defective. She was operated on March 7, 1895. The tube on left side was thickened. Its lower outer border communicated by an opening with a large sac situated between the folds of the broad ligament. The sac was quilted off, and the site was packed with a Mikulicz pouch, composed of iodoform gauze. Death followed on March 11. There were slight local manifestations; a rapid pulse and delirium were the leading symptoms. Probably these were due to iodoform poisoning.

Case II. *Extra-uterine Pregnancy. Operation at the Fourth Month. Death presumably from Iodoform Poisoning.*

Ida T., admitted January 17, 1897; aged thirty; married; four children; the youngest two years of age.

Four months previous to admission patient ceased to menstruate. Three weeks prior to entering the hospital she was seized with cramp-like pains in lower part of the abdomen, especially marked on the left side. These pains continued for six days, when they became associated with bloody discharges and the passage of clots.

On admission the patient was in great pain, and had to be kept constantly under the influence of opium. On bimanual examination

the uterus was found enlarged and crowded anteriorly and to the right, by a tumor with sign of obscure fluctuations that extended from the left and behind the uterus upward toward the left iliac fossa. The urine contained a trace of albumen.

Cœliotomy was performed January 23; a sac found behind and to the left side of the uterus, to which the omentum and intestines were adherent. The sac contained clots and a three and one-half-months foetus. It was quilted at the base and removed and a Mikulicz pouch was inserted to arrest oozing. At the conclusion of the operation, which presented no extraordinary difficulties, the patient's condition was excellent. Twelve hours later she became restless and semi-delirious; her temperature did not rise above 105° , and her pulse was rapid and feeble. She died on January 25, forty-eight hours after operation, suddenly.

Urine voided shortly before death gave a marked iodine reaction. Post-mortem examination showed no lesion nor inflammatory changes. Death was presumably due to iodoform poisoning.

Case III. Removal of Left Ovary and Tube; Acute Mania. Death on the Twenty-first day from Inanition.

Becky B., aged 19; no children; admitted September 23, 1896. Had had persistent pain in back and left iliac region since an attack of acute gonorrhœa six months previously. By combined palpation the left tube and ovary were found markedly enlarged and very tender to pressure.

The patient was kept in bed for three weeks and treated with tampons, douches, etc., but there was little diminution in the size of the tube and the pain still persisted. Cœliotomy was performed October 15, 1896. There were numerous recent adhesions of the intestines, which were easily separated. The left ovary was found enlarged to about the size of an English walnut, and the tube thickened and bound down by adhesions. The ovary ruptured during removal and a small amount of pus escaped. The right tube and ovary were normal.

The patient did well until the third day after operation, when a slight bronchitis developed and her temperature rose to 102° . On the fourth day, temperature 103° , patient restless and not sleeping well. The following day her temperature dropped to normal, and

the bronchitis began to subside, but the nervousness and insomnia increased. Full doses of bromide had little or no effect. On October 23 she developed symptoms of acute mania, so that it was necessary to use restraint to keep her in bed, and food had to be administered by a stomach tube. This continued until November 5, when the patient died of inanition. There were no signs of local trouble during the illness that followed the operation. Except for the slight fever that accompanied due to the bronchial trouble, the temperature was normal. Whether the mania was consequent upon the operation or was connected with a previously disturbed mental condition could not be determined.

*Case IV. Salpingotomy and Removal of Ovary from One Side.
Concealed Appendix. Death from Internal Hæmorrhage.*

Elsie V., aged twenty-one; admitted December 12, 1896; married; sterile.

Patient developed symptoms of salpingitis about four months before admission.

At the time of entrance into the hospital there was a profuse leucorrhœal discharge, tubal enlargement on the right side, and great tenderness diffused over the pelvic region. Temperature, 102°; pulse, 112, which with rest and care fell in three days to normal.

After a month of treatment, rest, tampons, douches and general tonic remedies, as the swelling on the right side persisted it was decided to operate.

The operation took place on January 7, 1897. The removal of the enlarged tube and corresponding ovary presented no unusual difficulties, though the adhesions were extensive.

After the excision was completed, a slight oozing was noticed in spite of the fact that the vessels were properly ligated; a Mikulicz pouch was therefore introduced. The patient rallied imperfectly from the operation and at the end of thirty hours died suddenly. The post-mortem examination revealed internal hæmorrhage as the cause of death. On examining the encised organs, it was found that the end of the appendix was concealed and covered by the tube and ovary. It had not therefore been recognized, and the distal end, which had not been tied, was the site of the bleeding.

Case V. *Hysterectomy for Fibroma; Sloughing Tumor. Death from Sepsis.*

Matilda D., widow, aged forty-nine, was admitted to the hospital January 24, 1897. She had had no children, but reported one miscarriage twenty-five years previously, which was attended with severe pain and fever.

She was suffering from severe abdominal pains, had constant desire to pass water, and had afternoon elevations of temperature varying from 100° at the time of admission to 102.5° the evening before operation. Her general condition was bad, and several examinations of the urine showed considerable albumen, with small hyaline and granular casts.

On combined palpation a tumor, apparently uterine, extending a hand's breadth above the symphysis, could be felt in the median line. Behind the uterus, through the vagina, obscure fluctuation could be detected.

On February 11 cœliotomy was performed. Behind and to the left of the uterus, firmly attached to the rectum and the side wall of the pelvis, a sac was found which was subsequently proved to be a suppurating fibroma. In the attempt to detach it from the adjacent structures rupture occurred, and about a pint of extremely offensive pus escaped.

Previously the intestines had been pushed away from the field by a septic pad, and after rupture the pelvic cavity was abundantly irrigated with sterilized saline solution. In the subsequent removal of the uterus, a considerable amount of blood was lost and many ligatures were used.

Death took place on the following day from acute sepsis (temperature, 104°). The autopsy showed parenchymatous nephritis, passive congestion, emphysema of the lungs and commencing peritonitis. In the specimen shown to the Society it will be seen that a ligature had been passed around the left external iliac arteries and that there had been considerable hæmorrhage under the peritonæum at that point.

Case VI. *Ventral Hernia; Uterine Fibroma. Operation for Hernia. Death from Nephritis and Obstruction to Lower Bowel.*

Mary M., married, multipara, aged forty-six, entered hospital January 28, 1897, for large umbilical hernia, which had grown rap-

idly in size, and had caused her repeated attacks of vomiting and pain. She had likewise a uterine fibroma nearly the size of a man's head. The woman was enormously fat. The abdominal adipose layer was between three and four inches in thickness. An operation was decided upon unwillingly, on account of slight evidences of some renal disease, examination of the urine showing a specific gravity of 1028, with a slight trace of albumen and a few hyaline and granular casts. On January 30, owing to symptoms of obstruction, an incision was made through the coverings of the hernia, extending from about four inches above to two inches below the umbilicus. The intestines were separated from the ring and replaced and the fibro-cutaneous surfaces were vivified. I found it impossible to perform hysterectomy on account of the thickness of the abdominal fat. I was compelled, therefore, to confine myself to the removal of the tubes and ovaries. To bring the edges of the abdominal wound together, catgut was employed for the peritonæum and fascia, and silkworm gut sutures were used to make the entire circuit of both surfaces of the section. Much force was needed to secure coaptation of the parts.

On the day following operation the albumen in the urine was markedly increased and, on the third day, after having had almost continuous vomiting for twelve hours, the patient died. There were no septic symptoms, and at the autopsy no inflammatory changes were discovered. There was chronic parenchymatous degeneration of the kidneys, but the immediate fatal result was apparently due to the crowding of the enlarged uterus into the pelvic cavity and the consequent obstruction to the lower bowel.

In the foregoing histories, death was due almost certainly, in one case, and probably in two, to iodoform poisoning; in the case where death took place from acute mania, it was ascertained that the patient had presented symptoms of melancholia in a previous visit to the hospital. In the death from an operation upon a gangrenous fibroma, a fatal result was probably unavoidable. In the instance where death followed from secondary hæmorrhages, owing to the accidental severing of the appendix, attention is called to a possible source of danger in all cases of right pelvic inflammations. The difficulty in the case of umbilical hernia, complicated with uterine fibroma, was largely a matter of technic, and yet under similar circumstances I should hardly know how to do better.

One fatal case I have not reported. It occurred in the practice of Dr. A. Flint, Jr., and I have not had the time to look up the history.

NOTE.—Since April 22 there have been to date seven cases of laparotomy in my service all ending favorably, viz.: one exploratory incision for tubercular peritonitis; two cases of extra-uterine pregnancy; one myomectomy for fibroma, two operations for single pus tubes by abdominal incision, and one removal of enlarged ovary per vaginam, thus making in all 112 cases with seven deaths.

REPORT OF OPERATIONS OPENING THE PERITONÆAL CAVITY—SECOND MEDICAL DIVISION,
BELLEVUE HOSPITAL.*

BY W. M. POLK, M.D., NEW YORK.

The operations necessitating the opening of the peritonæal cavity through the abdominal wall or by the vaginal route, a table of which is here presented, were made in Bellevue Hospital in the gynæcological service of the Second Medical Division during a period of fourteen years from January 1, 1883, to January 1, 1897.

One hundred and forty-seven vaginal operations show a mortality of 8.16 per cent. Five hundred and fifty-six laparotomies show a mortality of 10.61 per cent., or a mortality for the two methods of procedure of 9.38 per cent. No selection of cases was made, but all cases coming into the service, from whatever source, demanding operation, are included in the list. The class of patients coming to Bellevue Hospital for surgical relief is without doubt composed of subjects as unfit for operative procedures, because of their former unfavorable surroundings, as is found in any hospital receiving gynæcological cases. About half of the cases were operated upon in the public amphitheater of the hospital and in the presence of large numbers of medical students and physicians. The other half of the cases were operated upon in Ward 23 and in the operating-room in the annex of that ward. There has been practically no

* Read before the New York Obstetrical Society, May 4, 1897.

difference in the mortality of these cases, those receiving surgical treatment in the general amphitheater of the hospital, in the presence of the classes, faring equally as well as those operated upon in the small operating-room, with but few spectators. The effort was made always to secure strict asepsis, the usual antiseptic precautions being taken. The instruments were sterilized by boiling for one hour, as were silk and silkworm gut sutures and ligatures. Catgut was sterilized by soaking in ether, boiling in alcohol under pressure, and keeping in a 1 to 1,000 solution of biniodide of mercury in chloroform. Sponges were used up to two years ago, when gauze pads were substituted. They were sterilized by superheated steam. The towels, clothing of the surgeon, his assistants and nurses, and all dressings were sterilized by the same method. The surgeon's hands and the field of operation were scrubbed with green soap and water, and then bathed with 1 to 2,000 solution of bichloride of mercury. Sterile normal salt solution was used for irrigation whenever that became necessary.

A complete analysis of these cases in detail will be found later in the reports of Bellevue Hospital.

OPERATIONS OPENING INTO THE PERITONEÆAL CAVITY.

Held in Ward 23, Bellevue Hospital, from January 1, 1883, to January 1, 1897 (fourteen years). Dr. W. M. Polk, Visiting Gynecologist. Dr. C. C. Barrows, Assistant Gynecologist.

Vaginal Operations opening into Peritoneal Cavity.

	Total No.	Cured.	Improved.	Died.	Percentage of deaths to operations.
Carcinoma uteri (hysterectomy).....	29	22	3	4	13.72
Fibroma uteri (hysterectomy).....	14	12	0	2	14.28
Operations on tubes and ovaries.....	67	60	2	5	7.46
" for other causes as per list below.....	37	33	3	1	2.63
Totals	147	127	8	12	8.16

The "other" Vaginal Operations mentioned above.

	Total No	Cured.	Improved	Died	Percentage of deaths to operations
Prolapsus uteri (hysterectomy).....	5	4	1	0	0
Hysterorrhaphy (vaginal).....	2	2	0	0	0
Shortening utero-sacral and round ligaments.....	7	5	1	1	0
" " " " Alexander's operation..	1	1	0	0	0
" " " " round ligaments.....	3	3	0	0	0
" " " " (laparotomy).....	2	2	0	0	0
" " " " and salpingo-oöphorectomy.	1	1	0	0	0
" " " " and plastic operation on the ovary.....	1	1	0	0	0
Exploratory colpotomy and Alexander's operation.	3	3	0	0	0
Posterior colpotomy, breaking adhesions and Alexander's operation.....	6	6	0	0	0
Posterior colpotomy for metritis and adhesions.....	1	1	0	0	0
" " " " and salpingo-oöphorectomy and Alexander's operation.....	1	1	0	0	0
Posterior colpotomy, ligation of uterine arteries.....	1	0	1	0	0
Anterior colpotomy and curettage.....	2	2	0	0	0
Approximation of utero-sacral ligaments for enterocele.....	1	1	0	0	0
Totals	37	33	3	1	2.63

Laparotomies and Their Causes.

Fibroma uteri (hysterectomy, 71, Hegar's oöphorectomy, 6).....	77	65	2	10	12.98
Carcinoma uteri, hysterectomy suprapubic.....	12	5	1	6	.50
" " " " of ovaries.....	3	3	0	0	0
Hysterorrhaphies.....	45	41	2	2	4.44
Tubes and ovaries, various operations.....	280	255	7	18	6.42
Irrigation of tubes.....	2	1	0	1	.50
Cyst of ovary.....	20	16	1	3	.15
Dermoid cyst in ligament.....	2	1	0	1	.50
Cyst in ligament.....	7	5	1	1	14.28
Breaking adhesions of uterus, tubes or appendix.....	11	10	0	1	9.09
" " " " and Alexander's.....	7	6	1	0	0
Laparotomy and shortening utero-sacral and round ligaments.....	1	1	0	0	0
Prolapse of uterus (hysterectomy).....	9	8	1	0	0
" " " " and suture to abdominal wall.....	3	2	1	0	0
Appendectomy.....	4	2	0	2	.50
Perityphlitis.....	3	3	0	0	0
Cæsarean section (and hysterectomy, 1).....	2	1	0	1	.50
Splenectomy.....	2	2	0	0	0
Laparotomy and curettage of uterus.....	8	6	2	0	0
Stricture of rectum, dilated.....	1	0	1	0	0
Sarcoma of kidney, 2; tumor kidney, 1; cyst kidney, 1.	4	2	0	2	.50

Laparotomies and Their Causes. (Continued.)

	Total No.	Cured.	Improved.	Died.	Percentage of deaths to operations.
Sarcoma of uterus.....	1	1	0	0	0
Sarcoma of retroperitoneal glands.....	2	1	0	1	.50
Septic peritonitis.....	2	2	0	0	0
Tubercular peritonitis.....	6	3	2	1	16.66
" salpingitis.....	1	1	0	0	0
Hydatids (hysterectomy).....	1	1	0	0	0
Atrophy of uterus, infected ligature.....	1	1	0	0	0
Bifurcated uterus, obstruction of urine later.....	1	0	0	1	100.00
Pelvic hematocele.....	2	2	0	0	0
Excision of infected ligature.....	1	1	0	0	0
Exploratory laparotomies.....	34*	16	7	8	23.52
Ectopic gestation and salpingo-oöphorectomy.....	1	1	0	0	0
Totals.....	556	465	29	59	10.61

Laparotomies—Gastric and Intestinal Cases.

Gastric fistula.....	1	1	0	0	0
Enterorraphy (18, later enterostomy) for intestinal fistula.....	3	2	0	1	33.33
Fæcal fistula following appendectomy.....	2	2	0	0	0
Perforating gastric ulcer and general peritonitis.....	2	0	0	2	100.00
Gastro-enterostomy for carcinoma of pylorus.....	1	0	0	1	100.00
Intestinal obstruction (Havenmeyer).....	1	0	0	1	100.00
Sinus near duodenum, excision of ligature.....	1	0	0	1	0
Proctectomy (2 Kraske's).....	5	3	2	0	0
Abdominal sinus excised.....	6	5	1	0	0
Totals.....	22	13	3	6	27.27

Laparotomies for Liver and Gall Bladder Cases.

Cholecystectomy.....	1	1	0	0	0
Cholecystotomy.....	2	2	0	0	0
Cholecystenterostomy.....	2	2	0	0	0
Totals.....	5	5	0	0	0

Herniotomies.

Inguinal.....	3	3	0	0	0
Umbilical.....	7	6	0	1	14.28
Ventral.....	14	11	1	2	14.28
Femoral.....	2	2	0	0	0
Vaginal.....	1	1	0	0	0
Totals.....	27	23	1	3	11.11

* Not improved 3.

Laparotomies for Pelvic Abscess.

	Total No.	Cured.	Improved.	Died.	Percentage of deaths to operations
Pelvic abscess.....	10	5	3	2	20.00
“ “ and fibroma uteri.....	1	1	0	0	0
“ “ and pyosalpinx.....	1	0	0	1	100.00
Abscess behind pubes.....	1	1	0	0	0
Pelvic abscess caused by infected ligature.....	1	1	0	0	0
Psoas abscess and cystic ovaritis.....	1	0	0	1	100.00
Abscess sac involving uterus, intestines and appendages; removal of sac and hysterо-salpingo- oöphorectomy.....	1	0	0	1	100.00
Exploratory laparotomy and vaginal incision.....	1	1	0	0	0
Totals.....	17	9	3	5	29.41

Total of all cases before mentioned. Peritoneal Cavity.

Laparotomies as per table 2.....	556	465	20	50	10.61
Gastric and intestinal fistula as per table 3.....	22	13	3	6	27.27
Liver and gall bladder cases as per table 3.....	5	5	0	0	0
Herniotomies as per table 3.....	27	23	1	3	11.11
Pelvic abscess as per table 3.....	17	9	3	5	29.41
Vaginal operations as per table 1.....	147	127	8	12	8.1
Totals.....	774	642	44	85	10.98

Major Cases not Laparotomies (not in above table).

Divulsion, delivering foetus—curettage.....	3	2	0	1	33.33
Embryotomy, draining bladder (75 per cent. albumen)	1	0	0	1	100.00
Induction premature labor 4th mo. Cardiac disease..	1	1	0	0	0
Podalic version and delivery.....	1	1	0	0	0
Puerperal eclampsia, divulsion, delivery.....	2	2	0	0	0
Perinephritic abscess, lumbar incision and drainage..	2	2	0	0	0
Pyonephrosis, calculus (opening into intestines).....	1	0	0	1	100.00
Nephrorraphy, lumbar.....	11	9	2	0	0
Totals.....	22	17	2	3	13.63

Breast Cases—Excision.

Adenoma.....	1	1	0	0	0
Carcinoma.....	5	4	1	0	0
Excision, breast and axillary glands.....	1	1	0	0	0
Excision, breast and axillary glands and pectoral muscles.....	1	1	0	0	0
Totals.....	8	7	1	0	0

EXHIBITION OF UNIQUE MICROSCOPIC SECTIONS OF
PAPILLOMA AND CARCINOMA OF THE TUBES,
WITH A REVIEW OF CASES TREATED BY ME
AT ST. LUKE'S HOSPITAL DURING
ONE YEAR.*

BY T. J. WATKINS, M.D.,

Assistant Professor of Gynæcology, Northwestern University Medical School; Gynæcologist to St. Luke's, Wesley, Lakeside and Provident Hospitals, Chicago.

The object of this report is to give the results of some of the work done in St. Luke's Hospital, to compare the results of different operations, to attempt to formulate some rules for the selection of operations, and to briefly report some interesting cases.

The gynæcological operating-room is not a so-called "modern operating-room," as it has wood floor, painted walls, and inexpensive furnishings.

A graduate nurse and two assistants devote their entire time to preparing for and assisting at operations. They prepare all sutures, ligatures, gauzes, dressings, etc., used in the hospital.

Gauze is invariably used for sponging. Catgut prepared by the dry heat process in a Boeckmann sterilizer, is usually employed for sutures and ligatures in the abdominal cavity, and no bad results can be attributed to it.

The hands of the operator, assistants and nurses are scrubbed for from fifteen to twenty minutes with tincture of green soap and water, then in lysol one per cent. solution, alcohol, bichloride of mercury 1-1000, and finally in sterilized water. The results of this method of preparing the hands have been entirely satisfactory, as no cultures could be obtained from the hands thus prepared after they had been contaminated with pus from offensive pelvic abscesses.

* Read before the Chicago Gynæcological Society June 18, 1897.

LIST OF OPERATIONS, WITH COMMENTS UPON INTERESTING CASES.

Hystero-Salpingo-Oöphorectomy (Vaginal) for Uterine Carcinoma.

Total, two. Recovered,* two. In both cases the disease was far advanced. In Case I. no urine had passed into the bladder for twenty-four hours after the operation, when the forceps were removed on account of suspected occlusion of the ureters. Active hæmorrhage followed the removal of the forceps, which was stopped by forcipressure; urine then fortunately passed freely into the bladder, and the patient made a rapid recovery. The broad ligaments were clamped a considerable distance from the uterus, because the disease was far advanced. Two months after the operation she was enjoying good health, and no pelvic disease could be detected on vaginal examination. The recovery is, however, probably only temporary. In Case II. the carcinoma involved the fundus of the bladder. A vesico-vaginal fistula resulted, and the disease continued. The improvement was for only a short time. In Case I. vagino-abdominal hysterectomy would have been preferable, with removal of the iliac glands, as first suggested by Dr. Emil Ries, first performed by Dr. Rumpf, of Berlin, and later practiced at Johns Hopkins Hospital. In Case II. a radical operation should not have been attempted.

Hystero-Salpingo-Oöphorectomy (Abdominal) for Uterine Fibroid.

Total, four. Recovered, four. In these cases it probably would have been better surgery to have left the ovaries, as they were perfectly healthy, on account of possible benefit to be derived from the internal secretion of these organs. The method employed was a modification of the Goffe-Baer operation. The uterus in these cases was too large to be removed through the vagina.

Hystero-Salpingo-Oöphorectomy (Abdominal) for Uterine Fibroid with Suppurative Disease.

Total, three. Recovered, three. Case I. was a small fibroid with double tubo-ovarian abscess and extensive adhesions. The

*Recovery is here used to indicate recovery from the operation and not necessarily cure, because the time since the operations were done is too brief to give the permanent result, and the result in many of the cases is not known after the patients leave the hospital.

cervix was not removed; vaginal gauze drainage was used; suppuration occurred in the pedicle, which protracted the recovery. Total extirpation should have been done.

Case II. was a large fibroid with double pyosalpinx.

Case III. was a puerperal fibroid uterus which weighed six and one-half pounds at the time of removal. The tumor was located in the posterior wall of the uterus. The center of the tumor had suppurated, and the abscess contained about one pint of very offensive sero-pus. The walls of the abscess were very ragged, irregular and necrotic. The patient was about five and one-half months pregnant with twins. She miscarried, three days later became septic, and thirteen days later was operated on. Her history in brief is as follows:

Mrs. L. G., twenty-five years of age, married six months, has had dysmenorrhea for one and one-half years, and for some time has had dysuria. She had noticed no enlargement of the abdomen prior to pregnancy, and had considered her pregnancy normal. The morning of August 16, 1896, a large amount of amniotic fluid escaped. She suffered severe labor pains, and sent for Dr. A. W. Bigelow, who then saw her for the first time. He found an umbilical cord presenting at the vulva. The os-uteri was crowded upward and forward behind and to the left of the pubes by a large fibroid tumor. The abdomen was exceedingly large, very painful on pressure, and so tense that it was impossible to outline the tumor or the foetus.

The first foetus was expelled about 1 P. M. the next day (August 17), and was somewhat macerated, showing it had been dead for some days. In the evening Dr. Bigelow asked me to assist him to remove the placenta. Under narcosis the hand was introduced into the vagina; the fingers were with difficulty passed between the tumor and the pubes into the uterus, and after considerable effort the placenta was extracted. Following the placenta the second amniotic sac presented and was ruptured. It was impossible to touch the second foetus, on account of the obstruction caused by the tumor. The vagina was thoroughly irrigated with bichloride of mercury, and the cervix and vagina packed with iodoform gauze.

The second foetus with its placenta was expelled without aid the next morning (August 18). The pains were very strong during the entire labor. For three days following labor her condition was

good except that the abdomen remained very sensitive to pressure. She then developed a temperature which varied from 100° to 104° , the pulse varying from 90 to 120, from August 21 to August 29, when she was operated on. She was taken to St. Luke's Hospital August 27, 1896, prepared for abdominal section, and operation made two days later. An abdominal incision was made, the tumor removed, the arteries ligated with silk, the wound of the broad ligaments and stump closed by a continuous catgut suture, and the abdominal incision closed without drainage. The uterine cavity, Fallopian tubes and peritonæum showed no evidence of infection. She suffered very little after the operation, and recovered practically without any elevation of temperature or increase in pulse rate. The sutures were removed on the sixteenth day. The wound united without suppuration. She left the hospital in very good condition on the twenty-ninth day after the operation.

Vaginal Hysterectomy for Uterine Fibroid.

Total, two. Recovered, two. The tubes and ovaries were purposely left *in situ*.

Case I. had numerous fibroid growths in the general muscular system. She was hoarse, probably as the result of involvement of the laryngeal muscles. Thyroid extract was used for about two months, but without any relief. Now, about nine months after the operation, the hoarseness has entirely disappeared and the fibroids in the general muscles have much diminished in size. She has none of the neurotic disturbances of the menopause.

In Case II. a hernia was observed about two weeks after operation, for which she was operated on two months later. A vaginal discharge was the only subjective symptom of the hernia. I did not determine the contents of the hernia, as the protruding mass was covered by granulation tissue, and as I did not deem it safe to separate the adhesions. The hernia was treated by uniting the vaginal walls just below the hernia. She also has none of the neurotic disturbances of the menopause.

Hysterectomy (Vaginal) for Metritis Following Salpingo-Oöphorectomy.

Total, two. Recovered, two.

In Case I. the salpingo-oöphorectomy was done during an at-

tack of puerperal fever, for double ovarian abscess. The indications for vaginal hysterectomy were: Profuse muco-purulent uterine discharge, menorrhagia, large soft uterus, and cyst of left broad ligament. A vesico-vaginal fistula followed sloughing after removal of the forceps, which necessitated a second operation. Case II. was a neurasthenic, hysterical patient, addicted to morphine. The indications for operation were a small, tender mass behind the uterus, and some tenderness around one horn of the uterus. In the mass was found imbedded a silk ligature from the previous operation. The improvement following the operation was only temporary.

Curettage, Vaginal Section and Drainage for Retained Placenta, Metritis and General Suppurative Peritonitis.

Total, one. Died, one. Soon after this patient entered the hospital a large amount of offensive placental tissue was removed from the uterus, the cavity of the uterus was irrigated and packed with iodoform gauze. No tumefaction could be detected in the pelvis, and it was thought probable that the retained, infected placenta was the entire cause of her illness. She did not improve, and about eighteen hours later colpotomy was made and about one pint of offensive pus was found in the general peritoneal cavity. Free drainage was established, but she continued to fail and died about twenty-four hours after admission to the hospital.

Ventral Suspension for Retro-Position of the Uterus.

Total, one. Recovered, one.

*Ventral Suspension for Retro-Position of the Uterus with Complications.**

Total, nine. Recovered, nine. The uterus was suspended by a fine silk suture, which was passed on either side through the serous coat of the uterus, so as to include the ovarian ligament, and through the parietal peritonæum, and was then tied. I know of no case where the uterus did not remain in position, and of but one

*The complications were adhesions, adeno-myoma of tubes, salpingitis or ovaritis.

case where unfavorable symptoms followed. The fine silk suture used in this manner would not probably complicate gestation or labor. I have been able to determine the present condition of six of these patients. For about three months one of them experienced some distress on standing erect, which was probably due to too high suspension of the uterus. In one of them both tubes were excised on account of nodular growths and adhesions; both ovaries were left. Menstruation has been regular but profuse since the operation. One of these patients became pregnant, and aborted at the end of the second month, probably from endometritis. None of them have had any vesical symptoms, and in all of them the uterus has about the normal amount of mobility.

Vaginal Fixation for Retro-Position of the Uterus.

Total, two. Recovered, two. In one of these patients the uterus is now slightly displaced backward. The patient is wearing a pessary and feels well. She could not wear a pessary prior to the operation without pain. The fixation was done through a transverse incision of the anterior vaginal wall near the cervix. The incision was closed and fixation made by sutures inserted parallel to the line of incision, as suggested and practiced by Dr. Byford. Of late I have modified the technique, and now separate the cervix and vagina, as in hysterectomy. If the cervix is much displaced forward, the upper part of the posterior vaginal wall is incised longitudinally. By this procedure the cervix can be easily fixed upward and backward, which is the most important factor in restoring the uterus to its normal position. It obviates the necessity of suturing the body of the uterus to the vaginal wall so near the vaginal outlet, and thus must greatly diminish or avoid the danger of complications to gestation and labor, which have frequently occurred in cases following vaginal fixation.

Curettag for Retained Placental Tissue with Infection.

Total, three. Recovered, three.

*Curettag for Endometritis.**

Total, six. Recovered, six.

* All the infectious cases operated upon were, as a rule, curetted as part of the operation.

Salpingo-Oöphorectomy (Single Abdominal) for Pyosalpinx.

Total, five. Recovered, five. One of these patients was a number of years past the menopause; the uterus had atrophied so that it was only about one and one-half inches long. In another patient who had an abscess of the right tube, there was congenital absence of the left tube and ovary. In the left horn of the uterus there was a small nodule, probably an adeno-myoma, which was excised. This patient, however, continues to menstruate, but at somewhat irregular intervals. I know the present condition of these five cases, and in none of them has the other appendage become affected, and each of them had a well-defined abscess of the tube. Three of them dated from puerperal infection.

*Salpingo-Oöphorectomy (Double Abdominal) for Pyosalpinx.**

Total, thirteen. Recovered, thirteen. I have succeeded in following up the history of nine of these patients. One of them, a very nervous woman, has suffered much from neurosis, probably due to the menopause. Another developed a severe vulvitis and vaginitis (probably gonorrhœal) soon after leaving the hospital, and has suffered much since then from leucorrhœa and vulvar and vaginal irritation. Seven of them have suffered slightly or not at all from the neurosis of the menopause. None of the nine have had any menstrual discharge. In the nine patients observed, the occurrence of the menopause causes some mental distress. In like cases I would now explore the appendages through a vaginal incision, and in the cases where it seemed impossible to preserve the functions of either reproduction or menstruation, I would do a vaginal hysterio-salpingo-oöphorectomy. The abdominal operation was selected in most of these cases, with the hope of preserving one or both of these functions.

Hystero-Salpingo-Oöphorectomy (Abdominal) for Pyosalpinx and Metritis.

Total, one. Recovered, one. This patient had had vaginal section and drainage of a puerperal abscess of the right appendage.

* Most of these cases had suppurating, cystic or badly inflamed and adherent ovaries; but in many it would have been possible, and probably advisable, to have left an ovary or some ovarian tissue, so as to have avoided the production of the artificial menopause and possibly of sterility.

Suppuration occurred later in the other appendage, which necessitated abdominal section. The uterus was removed for metritis and adhesions. A vaginal hysterectomy would have been done had I known that suppuration existed in both ovaries.

Hystero-Salpingo-Oöphorectomy (Vaginal) for Pyosalpinx and Metritis.

Total, five. Recovered five. One of these patients had a pelvic abscess which filled the pelvis, extended down between the vagina and rectum, and extended above and to the left of the umbilicus. A vaginal section was made, through which the pus in the pelvis escaped; an abdominal incision had to be made in order to evacuate the abscess that extended into the abdomen. Thorough drainage was established. About two months later the radical operation was made. The uterus and appendages were one mass of friable necrotic tissue. After separation of the right broad ligament and the base of the left one, the remainder of the left broad ligament tore through and occasioned considerable hæmorrhage. The bleeding could not be stopped by forcipressure on account of the necrotic condition of the tissue. The pelvis was packed snugly with gauze to check bleeding. About two hours later it was necessary to remove the packing on account of hæmorrhage, and to repack with gauze saturated with Monsel's solution. She made a slow but good recovery.

One of the patients had suffered for years with a pelvic abscess which repeatedly discharged through the rectum. She had spent about six months of each year in bed. She had been repeatedly refused operation on account of her bad local state and poor general condition. A portion of one ovary was left. She has had regular monthly discharges of blood from the rectum. The rectum is free of hæmorrhoids. She complains somewhat of "hot flashes."

Two of them were near the menopause. Four of them are enjoying comparatively good health; the other one I have not heard from since she left the hospital.

Salpingo-Oöphorectomy (Abdominal) for Tubal Pregnancy.

Total, five. Recovered, five. One patient was operated on during active primary hæmorrhage. One of the operations was secon-

dary to vaginal incision and drainage. The vaginal incision was not the operation of selection, because the patient gave symptoms which indicated recent and recurring hæmorrhages; but she refused abdominal section. Two weeks after the vaginal operation was made she had a hæmorrhage and the tube was then removed by abdominal section.

In the case operated on during active hæmorrhage I believe the pregnant tube could have been removed with more rapidity and with less danger through a vaginal incision, and the recovery of the patient would probably have been more rapid and less painful. One of the patients had a large hæmatocele, which was first opened by vaginal incision; a large mass was found at the top of the hæmatocele, which necessitated the abdominal section. Two of the cases were not diagnosed as tubal pregnancy until after the abdominal section was made.

Hystero-Salpingo-Oöphorectomy (Abdominal) for Tubal Pregnancy, Pyosalpinx and Metritis.

Total, one. Recovered, one. In this case the other appendage was the seat of a suppurating disease and the uterus was large, soft, and badly adherent.

Salpingo-Oöphorectomy (Vaginal) for Tubal Pregnancy.

Total, two. Recovered, two. One of these operations was for an incomplete tubo-abdominal abortion. In both cases the pregnant tube was readily delivered and removed through a posterior cervical incision. One of these patients is now about six months pregnant. The pedicle in the two cases was clamped with a forceps, which was removed twenty-four hours later. The recoveries were much more rapid and less painful than would have followed an abdominal operation.

Salpingo-Oöphorectomy (Double Abdominal), for Benign, Primary Papilloma of the Tubes.

Total, one. Recovered, one. This case is of especial interest because only six other cases of primary papilloma of the tubes appear in the literature. The history in brief, is as follows: Mrs. C., aged thirty-four, was always well and strong until 1893, when she had a miscarriage, which was followed by a severe attack of puerperal fever. She became quite well again, and one year later

received a violent injury to the left inguinal region. This was followed by severe pain and fever, and she was admitted to St. Luke's Hospital about two weeks later (June, 1894). Examination revealed a large fluctuating mass posterior and to the left of the uterus. The abscess was incised and drained through the vagina. The abscess contained about one pint of non-offensive thick pus. In November, 1894, she reentered the hospital. Examination revealed a tumor to the left and posterior to the uterus, but higher in the pelvis than was the former one. This was opened through the old sinus and about one pint of pus mixed with colloid substance was removed. Drainage tubes were then worn for eight months. In August, 1895, the sinus was dilated and curetted and drainage tubes were worn again for two months. In January, 1896, the appendages were excised on account of persistent discharge of pus; otherwise she felt perfectly well. She made an uneventful recovery from the abdominal section and a recent examination showed the uterus somewhat atrophied, freely movable and free from disease. She feels perfectly well save for occasional "hot flashes."

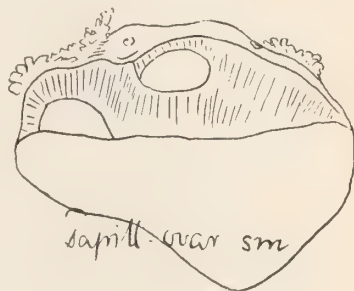


FIG. 1. Papilloma of left ovary (Case 1). Piece of ovary removed to show cysts in ovary.

Dr. Emil Ries kindly made a very thorough examination of the specimens and the following is his report:

“Macroscopical. Left appendage—Ovary not enlarged. On its surface in many places are found pedunculated and nonpedunculated wart-like growths. The tube is normal externally except for slight thickening of its isthmic portion. Cross-section through the tube shows nothing abnormal. The ovary contains on sections small cysts, most of which have smooth walls; some of them, however, contain papillary growths. (Figure 1.)

“Right appendage—Ovary of normal size. The tube is six cm. long; the fimbriæ are not visible; the abdominal end is dilated; the uterine end is normal in size; a few papillary growths are on the surface of the ovary and tube. The ovary contains a small abscess, in

NOTE.—These cuts are used through the courtesy of the Journal of the American Medical Association.—EDITOR.

which are found papillary growths. The abdominal ostium of the tube communicates with the cavity of the ovary. The outer half of the tubal canal is studded with papillomatous growths. (Figure 2.)

"Both ovaries and tubes are covered with many adhesions, which are free from papillomata.

"*Microscopic.* The papillomata of the ovaries and tubes are alike in structure, and consist of one layer of long, slender, columnar epithelium over a connective tissue framework, which arises from the mucous membrane and branches out into more and more delicate ramifications. The papillomata contain small calcareous concretions which are usually found in such growths. The wall of the tube over the papillomata shows small areas of round cell-infiltration. Near the mucous membrane are a few cyst-like epithelial formations, which are even found outside the circular muscular layer. The cysts do not contain papillary nor solid epithelial growths. I did not find any endothelial lining to the cysts. The little cysts of the left ovary (which do not contain papillomata) are lined with a simple low cuboidal epithelium and look like simple hydrophic follicles. No corpus luteum cysts are found. The little cysts which contain papillomata are of different structure. They are invested with columnar epithelium which is in direct continuity with the epithelium of the papillomata in the cysts. In several places the cysts communicate with the surface by a narrow cleft lined with epithelium like the epithelium of the papillomata.

"The fact that the growth is more extensive and prominent on the surface of the ovary than in it indicates that it did not originate in the ovary, but developed into it from the tube. The apparent slow growth in the ovaries and absence of ascites also favors the opinion that the growth was primarily tubal. Adeno-myomata were also found in the tubes."

Hystero-Salpingo-Oöphorectomy (Abdominal) for Primary Carcinoma of Both Fallopian Tubes, Myo-Fibroma of the Uterus, and Adeno-Myoma of the tubes.

Total, one. Recovered, one.* This case is of especial interest, as only nineteen other cases of primary carcinoma of the tubes are found in the literature .

* This patient died about six months after leaving the hospital from recurrence of the carcinoma.

Mrs. T. M., Bohemian, aged forty-five years, always enjoyed good health until about two weeks before admission to the hospital, August 29, 1896. She had had one child twenty-three years ago. No miscarriages. Her only symptoms were pain in the pelvis and difficult urination. No family history of malignant disease could be obtained. Menstruation had been regular and normal in amount, but painful. The temperature from time of admission to the hospital until time of operation varied from 99° to 103° ; pulse

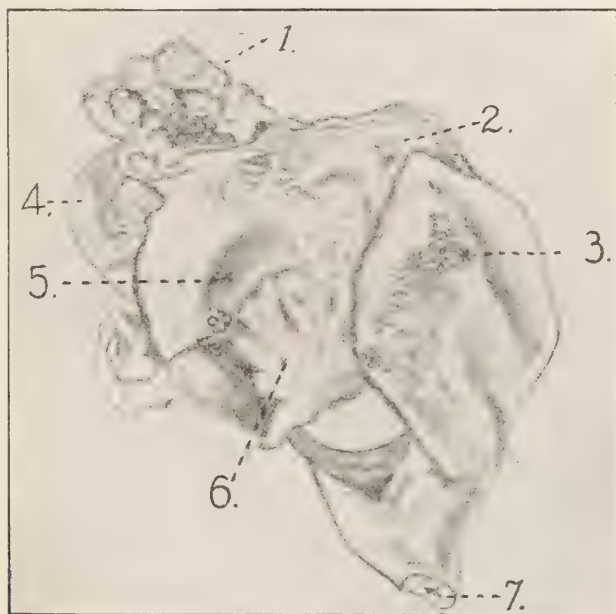


FIG. 2. Papilloma of right tube and ovary (Case 1). Tube and ovary cut open. 1, papilloma on surface of ovary; 2, papilloma in cavity of tube; 3, papilloma on surface of tube; 4, ovary; 5, abscess cavity in ovary; 6, abscess-membrane; 7, uterine end.

90 to 108. Vaginal examination revealed a fibro-myoma of the uterus, with large fluctuating masses posterior and to each side of the uterus. The operation was somewhat difficult on account of numerous and firm adhesions.

The following is a report of specimen by Dr. E. Ries: "Uterus 88 mm. long, cervix 12 mm. long, wall of fundus 10 mm. thick. Posterior wall contains a fibroid with well-marked capsule. Posterior wall 88 mm. thick, 16 mm. being the thickness of the uterine

muscular tissue. In each uterine horn is found by a nodule (N. Figure 3), which has a 15 mm. antero-posterior diameter on the left and a 17 mm. diameter on the right side. The right nodule has three small cavities filled with colloid material. Other nodules are found on the uterus. The right tube, measured along the upper border, is 260 mm. long; its largest circumference is 180 mm. The tube near the nodule at the uterine horn becomes narrower, then it enlarges and forms four large convolutions. The anterior surface of the tube, save for adhesions, is smooth; on the posterior surface are bulky papillomatous growths. The ovary, which contains several corpora lutea and follicles, has no papillary growths. The cavity of the tube (R. T. Figure 3) contains flat and prominent papillomatous masses, which fill the narrow isthmic part completely, but cause only a thickening of the wall of the abdominal end. The tube is so tortuous that on cross-sections of the isthmic portion the canal appears double. The wall of the abdominal end is 1 to 3 mm. thick; the wall of the isthmic portion is double the thickness. Near the broad ligament the tubal wall of the isthmic portion forms a white mass 5 mm. thick, and is covered externally by a stratum of papillomatous masses about 4 mm. thick. Several thick masses of adhesions connect the abdominal portion of the tube with a tumor mass (40 by 40 by 5 mm.). (R. M. Figure 3). On cross-section the mass consists of a white substance, which contains a central cavity. In the cavity are several wart-like excrescences.

"The left tube, measured along its external border, is 315 mm. long, the largest circumference (165 mm.) being at the abdominal end. Distinct furrows divide the tube outwardly into four convolutions. Near the first furrow, counting from the uterus, the anterior surface of the tube presents a tortuous elevation (L. M. Figure 3), about 30 mm. long and 1 to 2 mm. thick, a cross-section of which contains a white mass. The anterior and posterior surfaces of the tube are covered with pseudo-membranes. The ovary of this side (L. O. Figure 3) has an ovarian ligament 22 mm. long. The ovary (54 by 20 by 18 mm.) contains numerous corpora candidantia and follicles. Cross-sections through the nodules on the isthmic part present a thick wall and a cleft-like cavity. Further on the wall of the tube is a pretty homogenous white mass. It is stained brownish near the cavity. The cavity itself is filled with a blood clot which reaches from the isthmus to the abdominal end. If the



FIG. 4. Specimen of double papillo-carcinoma of the tubes (Case 2). Anterior view. Uterus cut open through anterior wall. Right tube held open by glass rod, G. Incision in abdominal part of left tube. F, fibroid; C, C, uterine cavity; E, elevation of uterine mucosa; L.A., anterior wall of uterus; N, N, nodule on uterine horn of each side; RRL, right round ligament; RT, right tube; RM, metastatic tumor in abdominal wall on right side; LRL, left round ligament; LT, left tube.

blood clot is lifted away from the wall, low papillomatous masses are seen everywhere. The wall of the abdominal portion is 2 mm thick; near the uterus the wall is 5 to 7 mm. thick.

"The abdominal ends of both tubes are closed. The right tube contained sero-purulent fluid which escaped during the operation, as the tube burst.

"Microscopical Description. Right tube.—The wall of the tube does not show any remarkable changes with the exception of some round-cell infiltration along papillary vessels. The mucous membrane presents a multitude of smaller and larger papillary elevations. The elevations consist in the largest part of epithelial masses, while the connective tissue skeleton of the papillæ is scarce, and frequently so crowded with round cells that very few connective tissue cells are visible. The epithelial masses form labyrinthian coils winding in and out, often so close together that no connective tissue whatever remains between them. The epithelium is arranged in single or multiple layers, mostly in the latter. The individual cells are columnar epithelial cells, some very long and thin, some shorter, almost cuboidal. The larger papillæ contain blood vessels. Small hæmorrhagic areas occur in many of the papillæ. The surface is covered with many detached and degenerated cells and cell detritus.

"The arrangement of the epithelial cells is not always distinctly papillary. In many places sections contain apparently glandular or cystic formations, which, however, are only produced by the knife cutting away recesses between papillæ. The epithelium does not grow downward into the wall of this tube.

"The peritonæal coat of this tube shows no pathologic changes in the macroscopically normal portion of the serosa.

"Left tube.—The mucous membrane of the narrower part presents the same appearance as the right tube; the papillary growths and the inextricable coils of epithelial formations exist here in the same manner as on the right side. The cavity contains considerable detritus, consisting of white blood corpuscles, detached and degenerated epithelial cells, and more or less distinct red blood corpuscles. The epithelium does not penetrate the mucous membrane in this part of the tube. The muscular coat contains a few areas of round-cell infiltration of no large extent. In the place mentioned in the macroscopic description, where the tortuous elevation resembling a dilated vessel is seen on the tube, the peritonæal surface

presents a very striking appearance. (See Figure 4.) Between the external muscular layer and the surface there is an accumulation of solid epithelial masses, divided by smaller or larger strings of connective tissue which form a network, the meshes of which are filled by the tumor cells. The tumor cells are many-shaped,

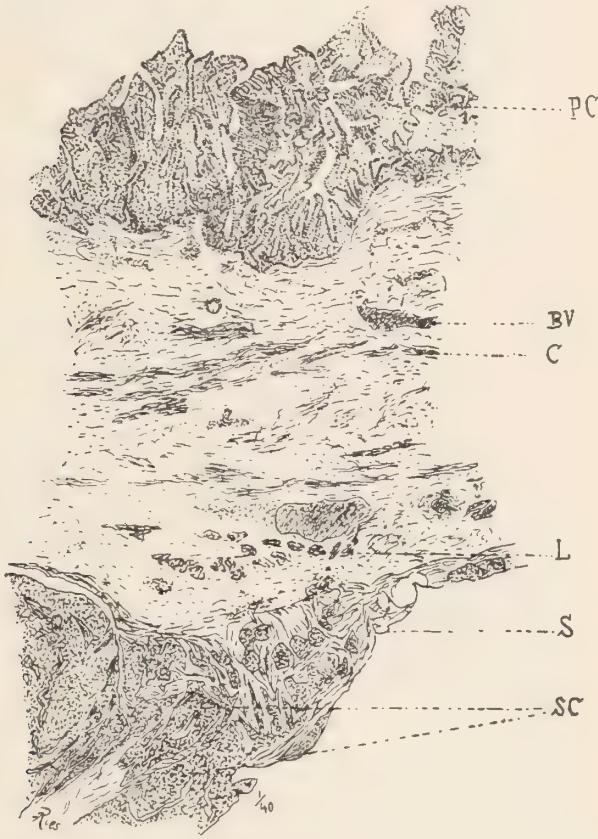


FIG. 4. Microscopic section of L M, Fig. 3 (Case 2). PC, primary carcinoma of tubal mucosa, the wall of the tube with C circular and L longitudinal muscular layers, and BV blood vessels. S, serous coat of tube with SC solid carcinomatous masses in it.

mostly roundish with large nuclei (some presenting unmistakable karyokinetic figures); others are very large cells with one large nucleus, while still others are real giant cells. The epithelial cells form rounded masses, or appear as rosary-shaped strings with more or less pronounced constrictions. The large epithelial masses are

in some places arranged in strings along and around capillaries which have preserved their endothelium. The latter is seen as a single line of flattened cells dividing the blood corpuscles from the tumor cells. In other places the endothelial lining has disappeared, so that the blood-space, as it is to be called then, is limited by the tumor cells themselves. Smaller epithelial masses, sometimes containing one or several vacuoles, do not contain blood vessels. They are separated from the surrounding connective tissue by a line of flat endothelial cells; in other places this endothelium is rather cuboidal, or even gives rise to small epithelioid buds. Taking all this together, I conclude that these tumor masses are located in lymph spaces, especially those sheathing blood vessels. The importance of this observation with regard to the dissemination of carcinoma by the lymph and blood currents is evident.

"A section of this left tube, comprising the insertion of the isthmic part on the broad ligament, shows the papillo-carcinomatous condition of the tube very much like the right tube; hæmorrhages, however, being more numerous and covering larger areas than in the other tube. The explanation of these hæmorrhages may be found in an obstruction of the venous current, indicated in the sections by the many vessels choked with red blood corpuscles. The peritonæal surface shows some solid carcinomatous nodules resembling those described above, but on a smaller scale. The paro-varian tubules in the broad ligament are very distinct. They are without any pathologic change. The wall of this part of the tube contains carcinomatous nests in several places. These nests show the path which the carcinoma has followed from the mucosa to the serosa. The nests are either solid or they have still preserved the papillomatous or coiled arrangement peculiar to the primary growth of the mucosa. Some of these nests are distinctly located in lymph vessels, as is demonstrated by the layer of endothelial cells which is still visible in some places, while in other places there is no such lining of the carcinomatous nests, which are imbedded in the tissue itself.

"*The nodular enlargements* of the isthmic part of the right and left tubes present an extremely interesting combination of neoplasms (see Figure 5), which is described here for the first time, and has not been mentioned in any other case of carcinoma of the tube. The enlargement of the tube here is not caused by a dilatation of the

tubal cavity, but by a thickening of the tubal wall. This thickened portion contains a normal tubal cavity, a slit of stellated or more or less straight shape, with the cuboidal or low columnar epithelium normally found in this part of the tube. Around the mucous membrane there is normal circular muscular layer. Between the

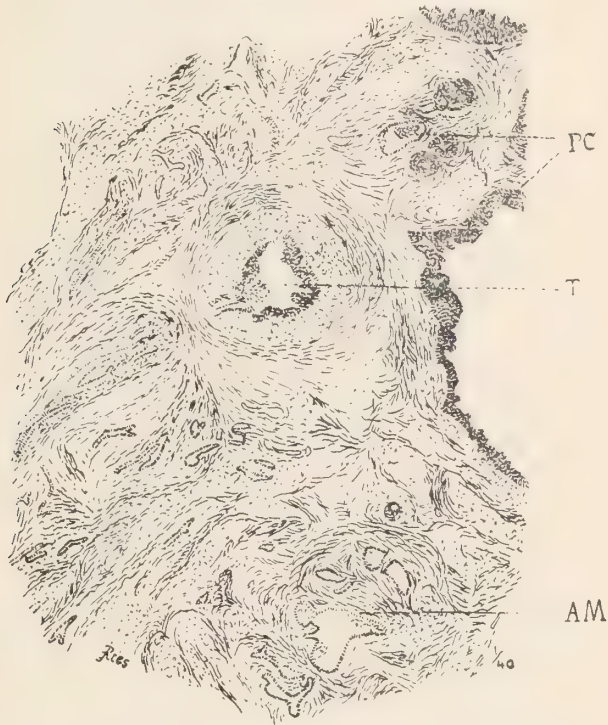


FIG. 5. Microscopic appearance of nodule N of left side, FIG. 3 (Case 2). Section of uterine horn of left side showing tubal cavity T, with its circular muscular layer, the adenomyoma AM, with its muscular tissue, and the carcinomatous masses PC, with papillæ and cyst-like formations.

latter and the serous surface the cause of the thickening is found. The wall of the tube contains: First, the elements of an adenomyoma, and secondly, papillo-carcinomatous masses. The adenomyoma presents the usual appearance as first described by Von Recklinghausen.* There are epithelial tubes, straight or curved or ramified, surrounded by more or less cytogenic tissue and a well-

* Von Recklinghausen: Adeno-myome der Uterus und Tubenwandung 1893.

pronounced muscular coat. I need not further dwell on this adeno-myoma as I have discussed it fully in a paper on 'Nodular Forms of Tubal Disease.*' I must add that in each of these nodules a process of the mucous membrane of the tube was seen penetrating the circular muscular coat of the tube, so that here, as well as in the cases described in my paper mentioned above, it was hard to decide whether the epithelium of the adeno-myoma had originated in Mueller's or in Wolff's duct. Beside this adeno-myoma, the thickened wall contained beautiful papillo-carcinomatous growths, which in some places were simply papillomatous, while in others they were more or less solid nests. In several instances the little cavities which contained the neoplasm were partly lined with a single layer of low columnar epithelium, while the rest was lined with multiple epithelial layers, or was the seat of papillary growths. This leads me to the conclusion that some at least of the carcinomatous nests developed in cavities primarily belonging to the adeno-myoma, supplanting or as it has been called, 'infecting,' the original epithelium. Under the serous coat there are numerous solid carcinomatous nests filling lymphatics. Some of these nests are so large that they form carcinomatous nodules visible with the naked eye. The small cavities mentioned in the macroscopic description are partly simple cysts of adeno-myoma partly filled with papillomatous masses.

"Uterus.—On the left side I followed up the extension of the neoplasm into the body of the uterus, and found that solid and papillomatous masses were spread a short distance into the muscular coat of the uterus, but did not penetrate deeply into it. Along the serous coat, however, the neoplasm had spread extensively, so that small subserous fibroids of the posterior wall and fundus of the uterus, as well as the adhesion membranes on the uterus, everywhere contained carcinomatous masses. The fact that the progress of the malignant neoplasm largely took place along the subserous lymphatics is also proven by the observations made on the body of the uterus, the round ligament, the myoma contained in the uterus and on the endometrium. The endometrium presented nothing but a very light glandular hyperplasia. The muscular coat of the uterus (with the exception of the external layers mentioned above)

* Ries: Amer. Jour. of Exper. Med. (To appear in the next issue.)

and the myoma contained absolutely no epithelial formations. The myoma, or rather myofibroma, had a well-pronounced capsule, and had none of the characteristics of an adeno-myoma. The round ligament showed small carcinomatous nodules in and under its serous coat, but its substance was free from epithelial elements.

"The carcinomatous infection of the adhesion membranes around the uterus and its ligaments has produced quite bulky tumors, especially on the right side of the broad ligament, where the tumor which is mentioned in the macroscopic description (R. M. Figure 3), and which has almost attained the size of an ovary, is purely a carcinomatous growth. The formation of adhesions with



FIG. 6. Microscopic section of ovary (Case 2). E, germinal epithelium of ovary interrupted where carcinomatous masses C adhere to the surface of the ovary. The substance of the ovary, O, is normal.

the ovaries has also given rise to the growth of metastatic carcinoma on the ovaries (Figure 6). The substance of the ovaries is without a trace of carcinoma, but the surface of the ovaries is studded with carcinomatous nodules. Their metastatic nature is proven by the fact that in many instances the carcinomatous nodule and the ovarian substance are separated by a well-preserved line of germinal epithelium, which is interrupted at the places where the adhesion membrane has grown to the ovary. The carcinoma is arranged in the same way as in the subserous nodules on the surface of the tubes and uterus; that is to say, in solid strings of cells following the lymphatics. Where we see a tumor originating in the germinal epithelium of the ovary the structure of the tumor is entirely differ-

ent, the epithelial neoplasm developing on the surface primarily and essentially in marked contrast to the condition prevailing in this case."

Incision and Drainage, and Salpingectomy for Pyosalpinx and Appendicitis.

Total, one. Died, one. The incision was made above and parallel to Poupart's ligament on the right side. The right tube was removed. The appendiceal abscess was drained. The patient did well for about thirty-six hours, when the pulse became weak and rapid, and she died about twelve hours later. Temperature was about normal until near time of death. Post-mortem examination showed no cause of death, at the site of operation. The fatal termination was probably due to a cardiac embolism. The heart, however, was not examined, as only a partial autopsy was allowed. The pyosalpinx was not diagnosed prior to operation.

Oöphorectomy (Abdominal) for Ovarian Cyst.

Total, eleven. Recovered, eleven. One patient was about three months pregnant, but the pregnancy was not interrupted. In one case, a girl eighteen years of age, the cyst was quite generally attached by friable adhesions to the pelvic peritonæum, broad ligament, uterus, intestines and omentum. Separation of the adhesions was accompanied by terrific hæmorrhage, which could be controlled only by rapid application, by touch, of a large number of forceps. An attempt was made to stop the bleeding with ligatures and sutures, but it was found necessary to leave six forceps on bleeding points on the floor of the pelvis, and to insert a large gauze drain. One of the cases was a large gangrenous dermoid cyst with twisted pedicle, which so simulated appendicitis that an incision was first made over the region of the appendix. Only one ovary had to be removed in any of these cases. The cysts were all too large to be removed by vaginal section.

Oöphorectomy (Vaginal) for Ovarian Cyst.

Total, three. Recovered, three. The cysts were about the size of a small orange, and were easily delivered through a T-shaped in-

cision of the posterior vaginal wall. The recoveries were relatively painless and rapid.

Hystero-Salpingo-Oöphorectomy (Vaginal) for Double Suppurating Ovarian Cyst.

Total, one. Died, one. Before operation this case was supposed to be one of suppurative disease of both appendages, with extensive inflammatory exudate. Both ovaries were imbedded in exudate, as were also the uterus and tubes. After the operation was completed, it seemed that the patient's chances for recovery were much better than they would have been had an abdominal section been performed. Her condition was good for four or five days following the operation, save for elevation of temperature and increase in pulse rate. On the fifth day the wound, which had healed firmly, was reopened and showed that there was no accumulation of pus, serum or blood in the pelvis. There were no symptoms of peritonitis. On the seventh day the patient died, presumably from infection carried through the lymphatics. An autopsy could not be obtained.

Salpingo-Oöphorectomy (Abdominal) for Double Ovarian Abscess.

Total, one. Recovered, one. The cause of the suppuration was infection from an induced abortion. The patient for two days prior to the operation had a temperature varying from 103° to 105°.

Vaginal Section and Drainage for Ovarian Abscess (Puerperal).

Total, one. Recovered, one. In this case an abdominal hystero-salpingo-oöphorectomy had to be done later.

Vaginal Section and Drainage for Pelvic Abscess.

Total, eleven. Recovered, eleven. In one of these cases a vaginal hystero-salpingo-oöphorectomy was done later. The other ten patients have not to my knowledge had any recurrence of pelvic inflammation. Some of the patients were in such a desperate condition that they would probably have died had they been treated by a radical operation. The recoveries are, I believe, more perfect than would have followed a radical operation, and no organs were sacrificed.

In two or three other cases, after abscesses were incised through the vagina, conditions were found indicating radical operation, which was immediately done.

Acute Pelvic Peritonitis. Two cases of acute pelvic peritonitis were treated without operation. One case was due to acute gonorrhœal infection. Both recovered without any apparent involvement of the uterine appendages.

Abdominal Section and Drainage for Pelvic Exudate (Puerperal.)

Total, one. Recovered, one. The exudate involved principally the right horn and appendage of the uterus, but also extended to the bladder, omentum and intestines. The exudate was so resistant to pressure that it was impossible to separate the adhesions without doing great damage to these organs. With the finger, holes were bored into the exudate and abdominal drainage established. I have recently examined this patient, and the pelvic organs seem to be free from disease.

Vaginal Section and Drainage for Exudate in Broad Ligament (Puerperal).

Total, one. Recovered, one.

Abdominal Section for Tubercular Peritonitis with Suppurative Disease of Uterine Appendages.

Total, two. Recovered, two. These two patients had very extensive tubercular peritonitis without ascites. Both recovered sufficiently to leave the hospital, but the improvement could only be temporary. In both a fæcal fistula followed.

Hystero-Salpingo-Oöphorectomy (Abdominal) for Tubercular Salpingitis.

Total, one. Recovered, one.

Ventral Hernia.

Total, three. Recovered, three. In one of these cases the abdominal cavity was not opened. The fascia was exposed by incising the sheath of the recti muscles at the inner border. The layers

of the fascia were then closed separately. This method of free incision into the sheaths of the recti muscles makes the operation easy and insures obtaining the true fascia. In one case the fascia was so separated, on account of the long duration of the hernia and of increase in adipose tissue, that it was impossible to bring the edges of the fascia within four inches of each other. In this case the hernial sac was incised along the median line, the sheaths of both recti muscles were opened, and the surfaces of the flaps were then overlapped so that the sutures which were passed through near the edge of the left flap included the fascia on the right side; and the sutures that passed through near the edge of the right flap, included the fascia in the left side. This caused about four inches of peritonœal surface to be in contact with the same amount of wound surface. The peritonœal surface was not abraded. The sutures which joined the edges of the flap to the edges of the fascia on either side were tied over small rolls of gauze. The superficial part of the wound was closed with silkworm gut sutures. This made three tiers of sutures. The wound healed by primary union, and the abdominal wall continues to be strong.

In operations for ventral hernia much time is saved by opening the sheaths of the recti muscles along their inner border as soon as the skin incision is made. As the strength of the wound chiefly depends upon perfect union of the fascia, care should be taken that the fascia is perfectly coapted. This I do by using the modified quill suture described later.

Congenital Absence of Upper Two-Thirds of Vagina.

Total, one. Recovered, one. A mass the size of a chestnut was found where the uterus should be, and masses about half as large were found lateral to this, which were probably rudimentary ovaries. A transverse incision was made in the vault of the vagina. A canal was then made with the finger from this point to the uterus. Transverse incisions were then made across each vaginal wall, so as to allow them to be lengthened. The vaginal walls were now sutured into the rudimentary uterus, and the transverse incisions in the vagina closed by sutures introduced parallel to the lines of incision. This left a vaginal canal $2\frac{3}{4}$ to 3 inches long. A medium size Sims' vaginal dilator was worn for three weeks. A recent examination shows the vagina to be about normal in dimensions.

Inguinal Ovarian Hernia.

Total, one. Recovered, one.

Vaginal Hernia following Vaginal Hysterectomy.

Total one. Recovered, one.

*Plastic Operations for Lacerations.**

Total, eleven. Recovered, eleven.

Hæmorrhoids.†

Total, one. Recovered, one.

Incision and Drainage for Appendiceal Abscess.

Total, one. Recovered, one.

SUMMARY OF OPERATIONS.

	Total.	Recovered.	Died.
Hysterectomy (abdominal).....	12	12	0
Hysterectomy (vaginal)	12	11	1
Hysterorrhaphy.....	10	10	0
Vaginal fixation.....	2	2	0
Salpingo-oöphorectomy (abdominal).....	36	36	0
Salpingo-oöphorectomy (vaginal).....	4	4	0
Other abdominal sections.....	7	6	1
Other vaginal sections.....	12	11	1
Miscellaneous operations.....	26	26	0
	—	—	
	121	118	3

This number does not show the entire number of operations performed because, in order to make the report brief and less uninteresting, cases where two, three or four operations were done at one sitting are tabulated as one operation.

Deaths. One death was unavoidable, as no known method of treatment could have saved the life of the patient suffering from puerperal fever with general suppurative peritonitis. One death

* Under this head are included operations for lacerations of cervix and anterior and posterior vaginal walls, but not the plastic operations for lacerations done at the same time as the abdominal sections.

† A number of patients who were operated on for other conditions also had hæmorrhoids removed.

seemed to be accidental, as on post-mortem examination no conditions were present at the site of operation to account for death. The other death should have been avoided, as the general condition of the patient prior to operation was good, and the local condition was no worse than is found in many cases successfully operated on. An abdominal operation might have resulted in recovery.

Selection of Operations. I believe that the selection of operations may be briefly outlined as follows:

Carcinoma of the Uterus. In cases not too far advanced for radical operation, an abdominal section should invariably be made; but the operation may be completed through the vagina. Experience may prove that the iliac glands should as a rule be removed.

Uterine Fibroids. In cases not complicated by suppurative disease, the fibroids should in suitable cases be enucleated through the vagina. To accomplish this it may be necessary to incise the cervix, or to make a free vaginal section. When it is necessary to remove the uterus, the ovaries should not be removed unless diseased.

Vaginal hysterectomy is preferable to abdominal hysterectomy when the fibroid uterus is not larger than a pregnant uterus at the third or fourth month of gestation.

Suppurative Disease of Uterine Appendages. Thorough curettage of the uterus should usually be done at the beginning of the operation. The subsequent part of the operation should depend largely upon the experience of the operator and upon the environment. It requires less experience to operate through an abdominal incision than through the vagina. There is, however, greater danger of infection in abdominal than in vaginal operations. Abdominal section is preferable:

1. When the disease extends so high that it cannot be easily reached through the vagina.

2. Usually where it is advisable to do plastic operations upon the tubes or ovaries.

3. In patients that have had or have symptoms of appendicitis.

4. In cases complicated by an enlarged retroposed uterus, where it is possible to preserve ovulation or menstruation.

5. In cases where the vagina is small or especially septic.

The vaginal route is preferable when the above conditions are not present:

1. Where both ovaries are so diseased as to require complete excision; that is, when ovulation or menstruation cannot be preserved.
2. Where the uterus is so diseased as to indicate hysterectomy.
3. In patients near or past the menopause.
4. When the pelvis is apparently one mass of exudate, and especially in cases where pus has been discharged through the rectum.

The presence of a fat, protuberant abdominal wall is evidence in favor of a vaginal operation. The vaginal operation is preferable in cases where a diseased tube can be easily delivered through an incision made in front or behind the cervix. When this is done I believe it is better to control hæmorrhage by forceps than to suture or ligate. When in doubt as to choice of operation, an incision should be made through the vagina posterior to the cervix for exploration.

Circumscribed abscesses should be treated by vaginal section and drainage.

My results in cases of thickened and adherent appendages, from separation of adhesions and drainage per vaginam, have, as a rule, been unsatisfactory. The recoveries from vaginal operation were, as a rule, less painful and more rapid than from abdominal operations.

Tubal Pregnancy. Cases of early rupture with formation of large hæmatoceles should be treated by vaginal section and drainage. Cases of advanced pregnancy should be treated by abdominal section. In cases where the tube is small and located upon the floor of the pelvis, it should be removed through an incision made posterior to the cervix. In cases of early rupture, operated on during hæmorrhage, the tube can, I believe, be removed with less danger and with less disturbance to the patient through a vaginal than through an abdominal incision.

Small ovarian cysts should usually be removed through a vaginal incision.

REMARKS.

Cystic ovaries, not ovarian cysts, were usually punctured, preferably with the thermo-cautery, and not removed. Prolapsed ovaries found during abdominal section were treated by suturing the utero-ovarian ligament to the posterior surface of the broad liga-

ment, or by suturing the ligament near the uterus to the parietal peritonæum lateral to the incision.*

Prolapsed tubes which were not so diseased as to require removal were treated by suturing the mesentery of the tube to the round ligament. Nodules in the tubes were excised without removal of the tube.† In one case of a nodule (adeno-myoma) in the isthmic portion of the tube, the nodule and the interstitial portion of the tube were excised and the end of the tube was sutured into the opening in the uterus which resulted from the excision of the interstitial portion of the tube. The other appendage was removed for suppurative disease. The patient became pregnant soon after leaving the hospital and miscarried at the end of the second month, presumably on account of endometritis. A recent examination shows absence of pelvic disease.

One patient had an adeno-myoma in the middle portion of the tube which was resected. The calibre of the tube, however, was so small that it was impossible to perfectly coapt the edges of the mucous membrane. In this case it would probably have been better surgery to have amputated the tube at the site of the nodule, and to have made an abdominal ostium by incising the serous and muscular coats, so as to allow the mucous coat to become inverted.

In occlusion of the abdominal ostium in tubes not irreparably diseased, an opening was made by excising the end of the tube, and by incising the serous and muscular coats, so as to cause eversion of the mucous coat. Diseased tubes were removed by dividing the broad ligament close to, and for the whole length of, the tubes; where any disease existed in the interstitial portion of the tube this was also excised. The wound in the broad ligament and in the horn of the uterus was closed with a catgut suture by a continuous glover's stitch. (For description of technique see *Medical News*, July, 1896.)

Vaginal gauze drainage was used whenever the slightest indication appeared. Glass drainage was not used in a single instance. In three or four cases, abdominal gauze drainage was employed. The drains were removed at the end of twenty-four, forty-eight or

* An attempt was made to leave some ovarian tissue, in cases where both tubes had to be removed, and where the uterus was not irreparably diseased, for the purpose of avoiding an artificial menopause.

† See paper by Dr. Emil Ries in *Jour. of Exper. Med.* of July.

seventy-two hours, according to indications. Irrigation of the peritonæal cavity was not practiced in a single instance.

The abdominal wound was closed by "through and through" silkworm gut sutures. In a few cases the fascia was united by buried silk or silkworm gut sutures, and in a number of cases the fascia was coapted by a modified quill suture inserted as follows: A silkworm gut suture, armed with a needle, is carried through the skin and fascia on the left side, up and back through the fascia on the right side, including about one-half inch of the fascia, then back through the left side parallel to and about one-half inch distant from the entering portion of the suture. The suture was tied over a small roll of gauze to keep it from cutting through the skin. These sutures are inserted at intervals of about one inch, and ensure perfect approximation of the fascia, upon which the strength of the union depends. I much prefer this to the buried suture.

The suggestion of this suture occurred to me from observing a suture which Dr. E. C. Dudley has used. He inserted his sutures so as to draw the fascia of the left side of the wound to the right, and the fascia of the right side of the wound to the left.

The dressings over the wound are not usually disturbed for two weeks or more, when the sutures are removed. I believe suppuration occurred in only two cases in completely-closed abdominal wounds.

Small doses of morphia or codeia were given when necessary to quiet the patient or to obtain needed rest, but were avoided if possible. Hot water was given in small amounts as soon as the patient regained consciousness after the narcosis. Liquid diet was usually commenced on the second day following the operation. Nutritive enemata were used when persistent nausea and vomiting occurred. Plain water enemata were frequently given for thirst. The bowels were, as a rule, moved on the third and each succeeding day. The patients were usually kept in bed two weeks, sat up the third, and commenced to walk the fourth week.

The good results obtained were, I believe, largely due to the excellent work of the nurses in charge of the operating-room.

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LARGE VENTRAL AND UMBILICAL HERNIÆ IN THE
ADULT WITH THREE CASES OF RADICAL
CURE BY AN IMPROVED
TECHNIQUE.*

BY ALBERT GOLDSPOHN, M.D., Chicago.

Our subject excludes from consideration the great majority of the aggregate number of umbilical and ventral herniæ. We are dealing only with those cases that present a distinct difficulty in the technique of the operation for radical cure, and that have recurred with extreme frequency after such operation. Small- and medium-sized herniæ of this class in the adult offer no difficulty in operation, and no disappointment as to the permanency of results, with the best technique heretofore employed.

We will allude to the small, often unfortunately obscure epigastric, or so-called fat herniæ, merely by calling attention respectfully to the admirable treatises of Lucke (1), McCready (2), Oscar Witzel (3), Roth (4), Froehlich (5), and K. Bohland (6). The last-named author found these herniæ in one per cent. of all ambulatory (dispensary) patients. And all these authors join in the wholesome admonition to all practitioners to examine for these herniæ in all cases of gastralgia or obstinate stomach disorder. As to the embryonal and foetal types of congenital umbilical hernia in the new-born, and the acquired umbilical hernia in infants, and their treatment, we refer with satisfaction to the able articles of O. Lindfors (7), C. Breus (8), P. Berger (9), and Cahier (10).

An old question which has been asserted, denied and reaffirmed, each by a number of good authorities, is that many of the umbilical herniæ, when closely examined, are found to be not truly umbilical, but para-umbilical; that they come through apertures in the linea alba in close proximity to the navel, most frequently above and at its sides. When this is so, it is in all probability brought about by the interposition of the umbilical fascia. This structure was mentioned first by Vidal de Cassi (11), in 1848, who divided umbilical hernia

* Thesis for the Chicago Gynæcological Society, May 21, 1897.

into direct and indirect. It was more extensively traced and described by Richet (12) in 1856. It was noticed by Robin (13), who regarded it as exceptional in the publication of his investigations of the retraction of the umbilical vessels in 1858. It was again extensively investigated by H. Sachs (14), of Dorpat, in 1887, who describes it as follows: "The umbilical fascia may be regarded as a more markedly-developed portion of the transversalis fascia, which increases the resisting capacity of the peritonæum to a variable extent at the umbilical region. It constitutes a fibrous lamella, whose fibers run transversely and are intimately united to the inner blades of the sheaths of the recti muscles to the right and left. It bridges over the linea alba and all structures that lie in contact with it. Its upper and lower borders vary greatly in their extent and conformation, being sometimes distinctly concave." It is strongest where it passes directly across the umbilical ring, without dipping into it; and the peritonæum is firmly adherent to it. It was found present in the bodies of two-thirds of all children up to ten days old that were examined, and it becomes more distinct after the first month, although changes occur with the retraction of the umbilical vessels.

As to the frequency of occurrence of umbilical hernia, the statisticians have not been so active as in many things. But Bryant (14) and M. S. Marcy (15) say they constitute five per cent. of all herniæ and are next in frequency to those of the groin. But the larger ones to which we address ourselves fortunately will compose only a smaller portion of this percentage. These occur with great relative uniformity in females of small or medium stature, who are corpulent from an excessive amount of adipose tissue and have borne children. This is so much so that we can recognize in these features (1) the predisposing and (2) the principal exciting cause of these lesions. Their abdominal walls, and often their abdominal contents, are so encumbered with fat that the abdominal muscles atrophy rather than grow in proportion to the weight of the body and the degree of intra-abdominal tension. The predisposing cause is therefore evident. But females of this construction who are nulliparæ have these herniæ no more frequently than males of a similar build. Therefore childbirth must be the principal exciting cause, which is commonly admitted. But ascites and any other condition or action that implies habitual intra-abdominal pressure, either continuously or interruptedly exercised, or a sudden strain of the ab-

dominal walls, especially when the trunk is thrown backward, may be an exciting cause of umbilical hernia.

It is not of much practical importance whether the initial changes in the arrangement of tissues, in the incipency of paraumbilical and ventral hernia, occur through the outward progress of subserous lipomata, that insinuate themselves into crevices in the abdominal walls and draw the peritonæum after them, according to Roser; or whether, as others think, the exits for these herniæ occur in the channels where vessels pass through, whose bed has been widened by a deposit of fat, which has either given way to intra-abdominal pressure, by reason of its lesser resistance, or has been absorbed under conditions that cause emaciation, and has left openings into which the omentum may be forced from within. Both of these processes probably occur.

Wide diastasis of the abdominal recti muscles, in a generally relaxed and pendulous abdominal wall—sometimes associated with some degree of Glenard's disease—is not a rare result of frequent or rapidly repeated labors. But aside from this, the large ventral herniæ are quite uniformly the result of some trauma, or incision in the abdominal wall, that has left its individual layers imperfectly or not at all restored to their individual continuity. It is a blot on the otherwise fair records of gynecologists chiefly, and therefore it behooves them, especially, to be active in erasing it.

The occurrence of ventral herniæ after median abdominal section, as stated by various observers, varies from five to thirty per cent., the higher rates being obtained by those who base their figures upon actual examination of each and every available case, made by themselves or other competent physicians. Dr. John Homans (16), in 1887, from a review of 242 available cases, out of a total number of 384 abdominal sections, obtained fourteen per cent. Christopher Martin (L. Tait), according to J. D. Maury (17), claims to have had only five per cent. Edebohls (18), in 1891, had 4 herniæ in 54 cases, or 7.4 per cent. In 1895, Winter, with the assistance of Semmler (a student), produced the best contribution on this subject by making a personal examination of 393 cases, and securing an examination of 129 additional cases by competent physicians, making together 522 as available, out of 1,000 abdominal sections performed by G. R. Ohlhausen and himself from 1889 to 1894.

The astonishing results were that hernia followed in 30 per cent. of the sections made in 1889, in 29 per cent. of those made in 1890, and in 23 per cent. of those made in 1891. But, when during the subsequent two and one-half years, separate and accurate union of each principal layer of tissue, more particularly of the opened aponeurosis anterior to the rectus abdominis muscle was secured, the herniæ followed in only 8 per cent. of the cases.

As to herniæ following incisions in lateral portions of the abdomen, we learn, according to Carstens (20), that one firm alone, in 1893, made six dozen trusses to order especially for herniæ following the operation for appendicitis. And as to hernia following colotomy, Kuehne (21) reports, from Kuester's experience seventeen cases closed by *en masse* sutures, with herniæ following in nine cases, or 53 per cent.; while in twenty-seven cases of closure by apposition of individual layers, it occurred in only three cases, or 11 per cent.

The features about the closure of an abdominal incision and its after-treatment, that conduce to the subsequent formation of a ventral hernia, we would state as follows:

1. A portion of cyst or abscess wall or of a pedicle, sewed into any portion of the incision. These objects hinder the union of individual layers in the wound; they atrophy and retract, and leave a considerable aperture, which becomes closed only by skin united to a thin web of cicatricial new formation beneath it.

2. Voluminous capillary drains, especially when placed for septic conditions, when it cannot be removed in time to secure primary union, and a suppurating sinus ensues.

3. Closure of the incision by *en masse* sutures alone, when they catch the previously ununited margins of peritonæum, and draw them up so that they may become interposed between the inner edges of one or both recti muscles, and especially when separate and accurate apposition of the cut edges of the aponeurosis anterior to the rectus muscle—the principal bearing structure in this part of the abdominal wall—is neglected.

4. Suppuration in the wound, induced—when the operator and his materials are aseptic—by (a) the transit of septic elements removed from within; (b) by insufficient cleansing of the skin before operation; (c) by loose or contused tissue particles left in the wound; (d) by excessively heavy catgut or tendon, and its knots in the

buried tiers of the wound; (c) by excessive tension of the sutures; (f) by secondary infection from without through capillary attraction, as in silk sutures, and (g) by extravasations of blood between the layers, which occurs when suturing in *tiers alone* is relied upon, without any interrupted mass or tension sutures that should be placed at intervals of two to three centimeters, should embrace not over one-third inch of the skin edges, but much more of the recti muscles and their sheaths, and should pass through the peritonæal raphé, so that they will hold all the layers together.

5. Large abdominal drainage tubes, especially when left *in situ* longer than forty-eight hours.

6. Sutures of non-absorbable material having high capillary attraction, which therefore require removal earlier than the tenth or fourteenth day, which, as a rule, should not be done.

7. Insufficient suturing, intestinal distension, and all strains, as at defæcation or from an outcry, from persistent vomiting or coughing, or from interrupting the recumbent posture earlier than three weeks after operation.

8. Long and low incisions, particularly if the tendinous attachments of the recti muscles to the symphysis pubis are incised or mutilated.

9. Direct contact of intestines with the inner surface of the wound without the normal interposition of the omentum, which should never be neglected, when possible, before closing the wound.

Large umbilical and ventral herniæ are usually not reducible, and our observations agree with those of others, that the larger size of the eventration has rather rapidly developed since the time when the organs in it were no longer readily or spontaneously reducible, on account of adhesions to the sac, or vascular union with subcutaneous tissues. These develop quickly, particularly in ventral herniæ, where the peritonæum, being firmly united to the edges of the opening, is not so distensible, but ruptures early, and leaves the viscera to roam under a thin cicatricial web united to the distended skin, and forms a conoid projection. In the umbilical herniæ, likewise, the distended peritonæum forms trabeculæ between pouches of the sac in which the hernial contents are lodged and adherent, while they dissect up the adipose layer in an extensive area around the hernial opening frequently, and assume the contour of a conical mushroom. This mass rests upon a tense aponeurosis, the

linea alba, which has become from ten to fifteen or more centimeters wide, and is making a desperate effort to prevent still further separation of the recti abdominis muscles. Near the center of this web is the hernial ring, that usually has hard, sharp and calloused borders, and a transverse diameter of from six to ten centimeters. In case of a large umbilical hernia, the omentum, the transverse colon and the small intestine are the most frequent contents in the order named, and associated together or singly. But exceptionally, the ascending colon also, and vermiform appendix and part of the stomach, have also been found in it. (Schuchart.) In ventral hernia, the omentum and small intestine are the most usual contents.

These delicate and sensitive peritonæal structures, being hooked over the edges of the hernial ring, suffer impairment of their functions from flexure and compression, and make morbid traction upon their supports, which are inhabited by the solar plexus and its emissaries. In case of large umbilical protrusions, we concur with the view of K. Roser (22), (Hanau), that the omentum adherent in the sac makes traction upon the transverse colon. This in turn makes the mesocolon tense beneath the stomach like another diaphragm. The lesser peritonæal cavity and the stomach are thus crowded upon from below, while the transverse colon in turn is constricted, partly by traction on the omentum and partly by pressure against the stomach above. This play of vicious forces in these vital organs accounts, in a measure, for the pain and traction in the epigastrium, loss of appetite, dyspepsia, flatulence, constipation, melancholia and general debility that most of these patients suffer from, and it gives emphasis to the declaration of Championnière (23) that this lesion induces premature senility, albuminuria and diabetes. This author records a larger experience than any other. He has operated on eighteen of these cases, comprising many of the largest. He insists that all umbilical and ventral herniæ should be operated radically as early as possible; that when they grow to such huge proportions, they rapidly reduce the general patency of the entire abdominal walls so that operation without recurrence is no longer possible. Furthermore, Bryant declares that strangulation is relatively more frequent in umbilical than in all other herniæ—it constituting six per cent. of all cases of strangulation, and no small number of cases have ruptured spontaneously before this highly

fatal complication had appeared; three of such cases being observed by Edebohls (24).

But, notwithstanding, these marked disabilities and dangers which are depicted by Keatly (25), and emphasized by Saenger (26), surgical relief or cure has, until about ten years ago, been quite generally deferred until strangulation occurred. In 1890, Saenger's assistant, Dr. Lehmann, could not find more than twenty-seven cases of non-strangulated umbilical hernia operated upon during eleven years ending at that time, by seventeen operators, and with one death.

Strangulation in umbilical and ventral hernia, as in all others, has in all periods of surgical history, been the signal for operative interference. As exceptions to this rule are recorded Huguier (27) in 1861; also Verneuil (28) and Dr. Hodgen (29) in 1879. These authors favored leaving these disastrous strangulations to nature, because the fatality after operation was so high. As far as the records show, the old practice of waiting with surgical aid until strangulation and death are in sight, was departed from first by Burkhardt, of Stuttgart, in 1883, who operated for a large non-strangulated but irreducible umbilical hernia, which contained parts of the ascending, and transverse colon with the appendix vermiformis, and a portion of the stomach and small intestine. He sewed the ring with five buried wire sutures, and the outer wall with silk, and obtained a recovery. But it seems this forward step was not adopted until 1886, when Maydl (28) took the same and another very fruitful step forward.

The rate of mortality after operation for strangulated umbilical hernia is still high. In pre-antiseptic times it was extremely so. In a collection of cases made by Uhde (29) in 1869, 57 cases out of 122 died—or 47 per cent. But in 1884, Hofmokl (30) collected 34 cases (four men and thirty women) of which 5 only died—or 15 per cent. In 1889, Kaarsberg (31) obtained a mortality of 29 per cent. in a collection of 59 strangulated cases, while 9 non-strangulated cases all recovered. And in 1890 O. Vulpius (32) states the rate of mortality in strangulated cases as 18 3-10 per cent., while of non-strangulated cases he had a collection of 76 cases (six of Czerny's) all of which recovered.

It is therefore demonstrated that radical operation for these herniæ, when not strangulated, and when undertaken before their otherwise rapid infringements of the general health and spirits of the

patient have occurred, is attended with little danger as compared with other abdominal sections, if it is done with the same care and skill. It was not for this reason that otherwise bold and successful operators so long waited until strangulation or marasmus threatened; but (1) because of the manifest difficulty in the technic of closing the wound in these cases of wide diastases of the abdominal recti, and (2) because of the painful experience of seeing very frequent and early recurrences of the herniæ after the operation.

Dr. Lehmann (Saenger) noted seven recurrences in twenty-seven cases operated upon.

Thos. H. Manley (33) in a case with a wide opening closed it with tier sutures. But during the after-treatment the central part of the wound opened and 8 inches of small intestine was extruded and occluded. As late as 1895, Langsdorf (34) had to resort to adhesion straps to assist in closing the wound. These he continued for six months, and two months later the rupture recurred while wearing a bandage. Pernice (35) could close the wound only by deep en masse sutures. Championnière declares that recurrences will come. And Gill Wylie (36) had eight operations for ventral hernia to do, on six patients, in one year. Such were some of the discouraging features about this operation even in recent years, when two important improvements in the technic were known and practiced; viz., (1) opening the sheaths of the recti and sewing in tiers, and (2) omphalectomy.

The former of these devices was formally introduced to the profession by Maydl in 1886, who opened the median edges of the sheaths of the recti muscles, and closed the wound in four tiers of sutures. With this suggestion and from that time forward the operation was more generally adopted. This technic with minor modifications was adopted by Saenger, W. G. Wylie, H. Meek (37), Edebohls, Boldt (38), Baldy (39), Le Dentu (40), Kramer (41), Ostermeyer (42), Lucas Championnière and others. The last-named author lays stress upon removing as much omentum as possible. He removed 573 grams of this in one case. He had no death in eighteen cases.

Omphalectomy, the second improvement in the technic, that is often serviceable, was instituted by Storer (43) in 1866, and performed by Keen (44) in 1886, also by Sonnenburg (45) and Taylor.

What is erringly alluded to as the method of Condamin consists

in making an ellipsoid incision in the skin and deeper structures, entering the peritonæum at a point in the periphery of the hernial ring, disengaging the contents from that point of approach, and removing the sac entire with the skin in one mass. This was done in 1891 by John D. Maury (46). Next it was published by Goullioud (47), then by Condamin (48), and subsequently by Bruns (49), Brackel (50), Bordier (51), Van Noorden (52), Boughman (53), and others. Two other plastic efforts have been devised, with the idea of obliterating the linea alba, and fixing the bodies of the recti muscles in the median line to prevent recurrence of the herniæ.

The first is that of Gersunny (54), who proceeded as follows: Closure of peritonæum and of the denuded hernial ring, either separately or together; then to open the median edge of each rectus sheath and to dissect out each rectus muscle from its sheath and from the adjoining inscriptiones tendineæ with great care, and with the ligation of a number of arteries. Then union of these two bare muscles in the median line to make one muscle in the center. The empty sheaths of the muscles and particularly their inscriptiones tendineæ are to be seized in the sutures to reinforce the muscles.

The other one of these artful efforts was proposed by Dauriac (55) in 1894 and by Wolkowicz (56) in 1896, and consists in making a cross section of the exposed inner half of each rectus muscle at the hernial aperture, then crossing these segments and uniting them endwise with sutures, so that the upper segment of one side becomes united to the lower segment of the opposite side and vice versa, so that the median halves of the muscles cross each other in front of the former hernial opening. Next the sheaths of the muscles are to be approximated as well as possible. But these practices mean altogether too much mutilation of these essential bearing structures, that have been thrown partly out of function and enfeebled by their outward recession away from the median line, which will be clear to any one who sees or performs the operation in a few of these cases with wide diastasis of the abdominal recti muscles. Any tinkering with these muscles minus their sheaths, or cross section of any part of their fibers, is a mistake. (1) Their arterial supply must nowhere be diminished. (2) They must never be taken out of their sheaths. But these must go with them back to the median line, and be retained there for several weeks by tension sutures that do not cut the muscular fibers across

by pressure atrophy, which the continued high tension would not escape. To restore these muscles entire with their sheaths, en masse, to their normal median approximation, when they have been separated 10 to 15 cm., and not impede the circulation in their median borders or the edges of the wound, by transferring the unavoidable tension from the anterior median line of the abdomen to its lateral portions, is the object that I have attempted to achieve with a kind of tension suture that is not new in the surgery of other parts of the body. A considerable portion, from one-fourth to one-third, of the aggregate bulk of omentum and intestines has lost its citizenship within the abdomen (Hoffa 59), being carried outside of the abdominal wall proper under the skin and subcutaneous structures. The muscular walls—particularly in the domain of the internal and external obliquæ—have retracted. The problem is to overcome this retraction, and to compel the general abdominal parietes to harbor an additional amount of viscera. Gill Wylie, Boldt and Marion Sims (57) have used wire tension sutures for this purpose, that were placed like ordinary interrupted sutures, only a little deeper from the edge of the wound. But it is evident that these do not remove the tension from the domain of the recti muscles and their sheaths, and do not transfer it wholly to the lateral portions of the abdomen. And they will weaken the muscles by cutting their fibers across by pressure atrophy under the extreme and long-continued tension. The silver canulæ on the ends of apposition sutures of wire, the method of Emmet, adopted by A. P. Dudley (58), accomplishes nothing of the object here aimed at.

This transferring of the tension I have succeeded in accomplishing fairly well in three cases by double wire sutures, from 20 to 30 cm. in length, which are placed transversely about 6 cm. apart, anterior to the posterior blade of the sheath of each rectus after it has been opened, and are made to extend outward on each side through the lateral margins of these sheaths and through the fat and skin. As the first act in closing one of these wide gaping wounds, from three to five of these tension sutures are passed in the following manner: While one or two fingers of the one hand are introduced into the abdominal cavity, and are held against the adjacent parietal peritonæum, a long, straight, blunt-pointed pedicle needle, having an eye that opens toward the side, is passed from one of the wound margins outward laterally between the rectus muscle and



the posterior blade of its sheath, from which it emerges at the linea semilunaris and continues outward through the fat and skin. The doubled wire is then hooked at its closed end into the eye of the long needle, and is drawn by it into the wound. The handle of the needle is then turned in the opposite direction, and its point carrying the wire is shoved through on the opposite side of the wound, between and through the same structures as on the side of beginning, the finger of the other hand here also standing on guard within the abdomen, as shown in Plate I., that the posterior blade of the rectus sheath, the transversalis fascia and peritonæum, at least, will remain unimpaired, to shield the abdominal viscera from contact with the wires. When the wire has been passed it is unhooked from the needle and its ends are twisted on each side over a button of iodoform gauze or of lead with gentle tension, after the needle has been withdrawn. When the required number of these tension sutures have been placed, they are all tightened over their buttons enough to bring the wound surfaces near each other, but not to come in contact, so that the peritonæum and posterior blade of rectus sheath can be readily sutured by a continuous catgut ligature, either alone or together, behind the wires.

The peritonæal cavity is now closed and the wound may be irrigated if desired, and then the anterior rectus fascia is united in front of the wires by a substantial catgut thread, that is prepared to hold at least two weeks. As shown in Figure II., this is made to grasp this firm fascia and part of the muscle beneath it. When this tier of sutures is completed, usually the final degree of tension is placed upon the wires, so that the catgut sutures which have been introduced are relieved of nearly all tension, and the buttons on the wires sink well into the skin. The skin and subcutaneous fat may then be sutured by interrupted silkworm gut sutures, with or without a drain beneath, resting upon the second tier of catgut sutures. But it is more advisable to have the skin open to granulate, when the layer of fat is very thick, as it is in most of these patients, or where it has been necessary to dissect up this fat layer laterally for some distance off from the widened membranous expansion of the linea alba, in order to make the receded recti and their sheaths accessible for suturing. Such flaps of fat covered only by skin are prone to become necrotic and invite suppuration. Sutures may be passed and tied temporarily over a gauze packing and drawn up,

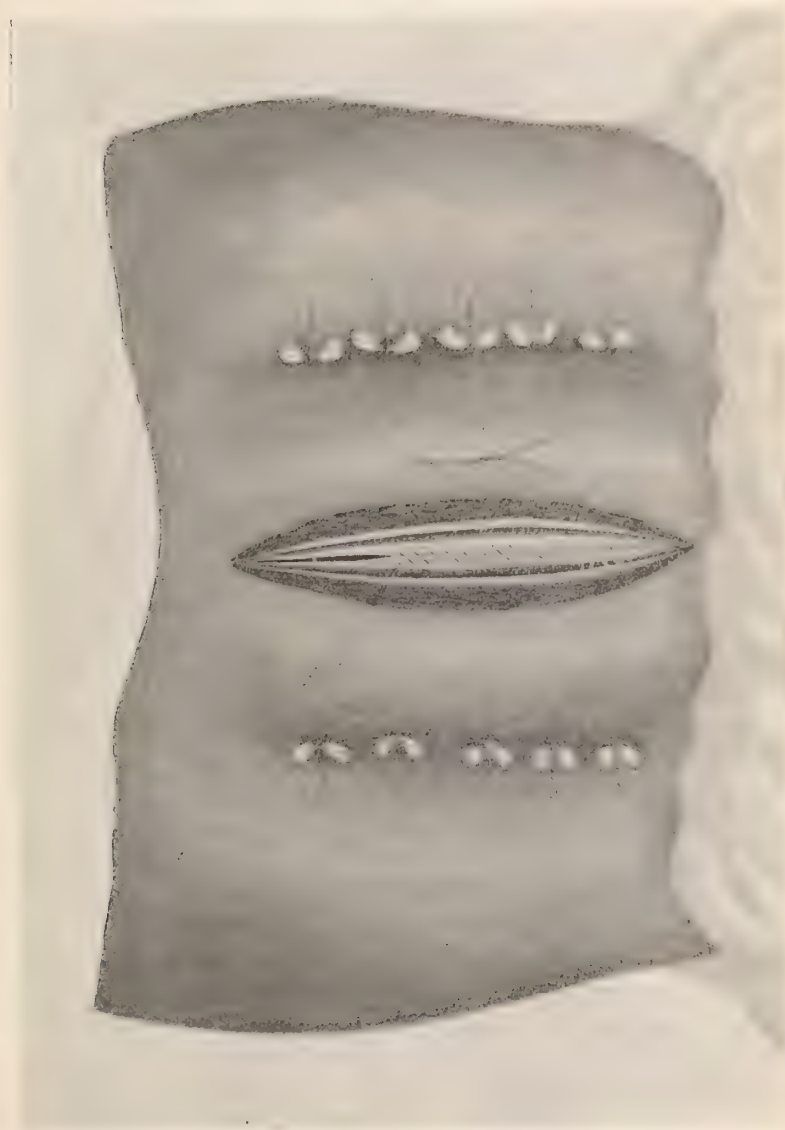


Plate II. illustrates: (1) The Wound with Surfaces brought sufficiently near each other for suturing by the First Act of Shortening the Tension Wires, by placing Tension upon them. (2) Closure of Peritoneum, Transversalis Fascia and Posterior Blades of Recti Sheaths, by a Continuous Catgut Suture Posterior to the Wires. (3) Union of the

when this is removed, in three to five days. Complete omphalectomy, with the removal of all aponeurotic structures between the inner margins of the recti, in such a manner as to expose these muscles by the omphalectomy incision, as demanded by Condanin, is an advisable procedure only in small or medium-sized umbilical and ventral herniæ. In those of large size, now treated of, there is a general scarcity of useful tissues. Fat only abounds. It is not advisable to remove anything except skin, adipose tissue and minor triangular pieces from the upper and lower portions of the hernial ring, so as to make it perpendicularly elliptical, if necessary. The remainder of the web that spans across the wide gap between the muscles should be denuded at its edges and abraded on its outer surfaces, which should then be sutured against each other and turned inward by successive tiers of continuous catgut sutures, as Maydl did in 1886, until the inner margins of the recti are brought into apposition with the assistance of the tension wires. Then the sheaths of the recti must merely be opened and the edges of their posterior blades united by a second tier of catgut sutures behind the tension wires, while the edges of the stronger anterior blades are united in front of these wires, by sutures that grasp also a part of the muscle beneath, as before stated. The ellipsoid incision in the skin and entrance to the peritonæal cavity in the periphery of the hernial ring is advantageous, because it facilitates the examination and detachment of the hernial contents and emptying of the sac. But in cases of strangulation, the sac should be opened first, in order to wash away all hernial fluid, which, according to Brentano (*Deutsche Zeitschrift für Chirurgie*, Bd. 43, p. 288) is never aseptic after thirty-six hours of strangulation and not often after twenty-four hours.

My cases were as follows:

Case I. Mrs. W., aged forty-eight years, 5 feet 3 inches high; weight about 200 pounds. Patient generally healthy and active. Married thirty-one years. Had one child twenty-two years ago. During much habitual lifting ten years ago, first noticed an umbilical protrusion, for which she did nothing, but in recent years has worn a cloth bandage, when it gave her discomfort. During the past year it has become rapidly larger, more painful, and would no longer disappear during recumbent posture. Complains of capricious appetite, dyspepsia, constipation, flatulence, with colic attacks.

Internal organs in general healthy. Is uncomfortable from obesity. In erect posture the median vertical outline of the abdomen is that of a low cone with a pendulous blunt apex at the navel pointing forward. There is no fluctuation nor distinct tympany in the protrusion, which measures 55 cm. in circumference upon the adipose layer at its base. Evident hernial contents can be palpated and moved from side to side, but not reduced. Operation October 9, 1891, after four days of preparatory treatment to clean the skin and empty the intestinal canal. The protrusion was circumscribed by two concave incisions, meeting each other at acute angles above and below, which were 29 cm. apart. The peritonæum was first entered on the left side, near the edge of the hernial opening. The viscera passing into the latter were examined with a finger, the sac then opened from this incision and dissected off from its contents, which were chiefly omentum, a loop of transverse colon and some small intestine, and lay spread out like a conical cake over and around the opening or ring. The latter measured 9 cm. transversely and had a thin, hard and smooth edge. After removal of a handful of omentum, the sac was cut away by the incision with scissors that freshened the sides of the ring, and took out triangular pieces from above and below, to facilitate approximation. The adipose layer on the sides was next raised sufficiently to expose the inner edge of the sheaths of the recti muscles, and these were simply laid open. Then, with one or more fingers continually inside of the abdomen to guide the needle, five long double wire tension sutures were placed exactly posterior to the muscles, so as to leave their posterior aponeuroses, the transversalis fascia and the peritonæum to guard the viscera from contact with the wires. The latter were then tightened over gauze buttons at the ends on each side until the wound edges were only about 3 cm. apart; then the layers posterior to the wires were closed by a row of interrupted fine silk sutures, and the wound then washed out. Finally, silk sutures were passed through the skin and fat 1 cm. from the edge and down through a thicker portion of each rectus and its anterior aponeurosis, at intervals of 2 cm. These interrupted sutures were tied, after the tension wires had received their final shortening, so as to bring the wound edges almost in contact with each other. A short gauze drain at the upper and lower angle of the wound, coaptation sutures, and a voluminous dressing completed the operation. An afebrile course and

primary union followed, but after two weeks the gauze buttons of the lowest tension wire became infected and cut into the skin and fat badly, and the tract of this wire suppurated, so that this wire had to be removed on the seventeenth day. The other four double tension wires remained in place four weeks. The patient was rather refractory, and neglected to wear any support for the first six months. After that time she did. I examined her recently. There is no protrusion anywhere in the line of the former incision, but a weak spot, the size of a hickory nut, at the place where the left lower (infected) gauze button cut into the tissues. But the abdominal walls, in general, appear overtaxed and relaxed. She feels better with an elastic support, which she wears regularly.

Case II. Mrs. K., aged thirty-five years; size, 5 feet 10 inches; weight, about 160 pounds; of rugged frame and muscles well developed. Married ten years; had one child eight years ago. No sickness aside from two attacks of extrauterine pregnancy, three and two years ago, respectively. The first of these she recovered from with no other assistance than a strictly-enforced recumbency of seven weeks. The second attack gave rise to extreme internal hæmorrhage in one seizure while in bed at night. Patient was extremely exsanguinated and nearly pulseless next morning. A necessarily hurried and successful abdominal section followed in her humble cottage, during which the operator, whom I assisted, made a cross section of a part of the right rectus abdominal muscle to facilitate his work. The severed portion of this muscle was united again by two silk sutures, and the main incision closed well by en masse sutures of silk. A glass drainage tube was removed in twenty-four hours. After an infusion of artificial serum into a vein, an ideally normal recovery ensued, with primary union throughout. But in one year afterward the cicatrix of the lower half of the wound had expanded, and to the right of the median line a protrusion had formed, in shape and size like half a hen's egg. Abdominal supporter was ordered. But now, twelve months later, it measures 38 cm. around its base, 25 cm. over its vertex, when in erect posture. When lying down it mostly recedes, and a part of the projecting skin pouch is drawn slightly into a large hernia opening beneath. But the contents are not wholly reducible. Patient complains of constant local pain when not recumbent, and of constipation and variable flatulency.

April 8, 1893. Radical operation in hospital. The various steps and general technic was the same as in the former case, except that only four tension wires were used, and the upper and lower ones were placed diagonally and made to cross each other near the center, because of a defect in the right rectus muscle. The ring was nearly circular and measured 7 cm. in diameter. The contents were mostly small intestine with some omentum, all of which was reduced after dissecting them off from the sac. No drainage. Recovery very smooth and complete primary union. Three tension wires were removed after four weeks, when she had gone home. Examination recently (after four years nearly) reveals no protrusion nor decided membranous spots anywhere, although some places are less resistant than others. Has not worn any bandage or supporter for about one and a half years. She complains of some uncomfortable sensations, sometimes a pain, locally, that are probably due to visceral adhesions, but does all her housework and washing.

Case III. Mrs. K., aged fifty-six years; one child, seventeen years old; height, 5 feet 4 inches; weight, 200 pounds. Generally healthy, but moves with difficulty. Has varicose ulcer of leg about eight years and suffers from general obesity. Three years ago we did a posterior kolporrhaphy and perinæorrhaphy upon her, for laceration with prolapsus uteri of second degree. No recurrence of this. About ten years ago, during severe and protracted coughing, she felt pain and a protrusion the size of a hazelnut at the navel. This she says, has remained so until one year ago. But during this time it has grown very rapidly, but caused her pain, she says, only while stooping. Constipation and slight colic attacks have abounded, and during the last two months a dark spot on the vertex of the protrusion has appeared, and is covered partly with small shiny scales or scabs. This induced her to ask for aid. While lying on her back, we find a large, rather flat and lobulated mass protruding at the umbilicus. It does not fluctuate, presents indistinct resonance, can be shoved from side to side without much pain, but cannot be reduced into the hernial opening that is barely palpable. Its wide base measures 49 cm. in circumference, while over its vertex it measures only 23 cm. Its borders are covered over by the very thick layer of surrounding adipose tissue.

Operation January 18, 1897. The incisions and entrance into the abdominal cavity were made and three tension wires placed in

the same manner as in the previous cases. The contents were composed of 49 cm. of small intestine solely, that was distributed in a number of pouches in the hernial sac. It and its mesentery were adherent in most of these, and to some of the septa so firmly that it was necessary to peel off the inner layers of the sac in order to disengage them.

After placing the first tension upon the wires and approximating the edges of the wound, the aponeurotic structures posterior to the wires were united by a fine continuous catgut suture. Next the wound was irrigated with Tavel's solution. Then the opened aponeuroses anterior to the recti were united in front of the wires by a continuous suture of heavy catgut, that embraced a part of the muscular fibers beneath also. The final tension was now placed upon the wires. The flaps of fat under the skin, which had to be raised for several centimeters on both sides in order to make the inner edges of the recti sheaths accessible, were united over a gauze drain with silkworm gut interrupted sutures. This last suturing had better not have been done so snugly, for it led to superficial suppuration in the wound after fourteen days, by fat necrosis in the bared flaps that were from 5 to 6 cm. thick. In the presence of this discharge the gauze buttons cut into the tissues more rapidly, so that the tension wires had to be removed on the twentieth day. But the deeper essential bearing structures of the wound healed by first intention, as could be clearly seen from the superficial wound, which was opened to heal by granulation and has prolonged the after-treatment, though it is now nearly closed.

This patient never had a rise of temperature above 101° on second day, nor acceleration of pulse over 110. For final results, this case is not available until several years have elapsed.

CONCLUSIONS.

1. Ventral herniæ being chiefly a sequel of some form of abdominal section, are largely preventable: (*a*) by the avoidance of those conditions which lead to suppuration, either primarily by infection, or secondarily from the presence of necrotic tissues, or by impairing the normal circulation; (*b*) by as complete and accurate a restoration of the individual continuity of all the strata, that were severed by the incision, as is possible; (*c*) by avoiding the intervention of foreign bodies—as capillary or tubular drains—or of pedicles, etc., be-

tween the surfaces of the wound for a longer time than forty-eight hours, when possible.

2. All umbilical and ventral herniæ, in persons whose health otherwise does not positively forbid the taking of the required surgical risk, should be radically cured early, by operation, before they impair the general patency of the abdominal walls by their larger proportions. This indication becomes imperative when their contents are no longer spontaneously or otherwise readily reducible.

3. The principal features in operating for the radical cure of large umbilical and ventral herniæ are: (a) restoration of the recti abdominis muscles, with their sheaths unitedly and entire, to their normal approximation, and retention of them there for at least two weeks by long tension sutures—preferably of wire—that pass beyond their lateral confines, transfer all tension to parts that lie laterally from the lineæ semilunares, and are so placed that they do not cut any muscular or aponeurotic fibers, nor endanger abdominal viscera; (b) all mutilating plastic procedures that cut off or interfere with the normal circulation, or endanger the continuity or normal contiguity of muscular and aponeurotic structures should be avoided.

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EXCESSIVE MOBILITY OF THE UTERUS.*

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At the outset, let me disclaim the idea and purpose, which otherwise I might be suspected to entertain, of presenting to you anything essentially novel, or of adding another to the list of pathological conditions of the female pelvic organs. The sole purpose of this brief paper is to call attention to and to designate correctly a condition with which you have all been long practically familiar, but which is rarely called by its right name.

In the discussion on retrodeviations of the uterus, at Geneva, in September, 1896, Pozzi alluded to this condition and in a subsequent private conversation with the writer expressed his belief that this was probably the first occasion on which the right name had been used to designate it.

My own attention was called to the subject, early in my career as a specialist, by the following oft-repeated experiences: A patient would present herself at my office or clinic in whom, upon examination, I found the uterus well anteverted or even anteflexed. A few days or perhaps a week or two later, a second examination would show the uterus in the second degree of retroversion. Or, conversely, the uterus would be found retroverted at the first—and anteverted or anteflexed at the second examination. Or, again, in my diagnosis classes at the Post Graduate School, where it is customary for four physicians successively to examine each patient, two of these would report the uterus as anteverted or anteflexed, the other two as retroverted or retroflexed, often causing dire perplexity until the apparent contradiction was explained.

The explanation lies in the laxity of the uterine supports, the round, broad and utero-sacral ligaments, sometimes aided and abetted by softness, fatty degeneration or want of tone of the uterine tissue itself. This laxity enables the uterus to assume or to be

* Read before the American Gynæcological Society, May 6, 1897.

readily placed in any position, varying in some cases between extreme retroflexion and extreme anteversion, or even anteflexion. Laxity of the ligamentous supports is the essential condition. If, in addition thereto, the uterine tissue be softer than natural, flexions will be superadded to the anterior or posterior displacements. If the normal tone of the uterus be preserved, ante-version and retroversion, without flexion, will be the outcome. If bimanual palpation be practiced upon a patient with such a uterus by a number of men in succession, it will frequently happen that one examiner will find the uterus in anteversion and leave it in retroversion, or vice versa, for his successor. Hence the discrepant diagnoses of successive examiners.

A few experiences of this sort with my classes early pointed the way to a method for the clear diagnosis of these cases at one examination. It is naturally very unsatisfactory and incomprehensible to a patient to be told by an expert, after a first examination, that she has an anteflexion of the uterus and, after a second examination, perhaps made on the same or the following day, by the same or another expert, that she suffers from retroversion. A way of making the diagnosis at one examination becomes, therefore, a great desideratum in practice.

The diagnosis of excessive mobility of the uterus is readily made in the following manner: Say we find the uterus, on bimanual examination, in anteversion or anteflexion. Push the cervix forward toward the symphysis, by the intravaginal finger carried into the posterior fornix of the vagina, at the same time crowding the body of the uterus backward into retroversion by the fingers of the other hand upon the abdomen. An excessively movable uterus is thus readily retroverted, *and moreover remains in retroversion after withdrawal of the fingers from vagina and abdomen*, or returns but very slowly and sluggishly into a position approximating the normal. In this it differs from the uterus with normal mobility, which either cannot be displaced into retroversion of the second degree, or if forced into the latter position, springs back at once into normal anteversion when released from the pressure of the fingers. The same holds true of an excessively movable uterus found in retroversion. It is readily reduced and remains readily in anteversion.

The diagnosis of excessive mobility of the uterus excludes *ipso facto* the presence of adhesions.

In my own experience I have most frequently been called upon to substitute the diagnosis of excessive mobility of the uterus for that of antelexion of the uterus initially made. As the treatment of these cases resolves itself essentially into that of retroversion, the diagnosis between movable retroversion and excessive mobility of the uterus becomes of minor importance. On the contrary, however, *every* case of antelexion or even exaggerated anteversion of the uterus should be carefully tested for excessive mobility.

The symptoms due to excessive mobility of the uterus are essentially those of retroversion of the uterus, plus a characteristic disturbance of the functions of the lower part of the intestinal tract, such as tympanites and readily-provoked irritation of the colon and rectum, as manifested by alternate constipation and looseness of the bowels, and occasionally by membranous enteritis. Neuralgiæ and dysæsthesiæ of a fugitive or wandering character, generally not severe, affecting the lower abdominal and pelvic regions, or more correctly speaking, the lower end of the trunk, are quite characteristic of the affection under discussion.

The symptoms, especially those pertaining to disturbances of the digestive and nervous systems, sometimes resemble closely those of movable kidney or kidneys. The two affections, indeed, very frequently coexist in the same woman. When excessive mobility of the uterus is present without displacement of the kidney or kidneys, the characteristic præcordial pain, cardiac palpitation, and inability to lie with comfort on one side, due to movable kidney, are absent. The interference with the functions of the stomach, so constantly present in movable kidney is also less marked, or may be entirely absent.

Excessive mobility of the uterus may constitute part and parcel of a general enteroptosis or Glenard's disease. It may, however, exist as the sole pathological condition, or in combination with any one or more of the various visceral displacements. Conversely we may have any combination of visceral displacements without displacement or excessive mobility of the uterus.

To the writer's mind the symptoms of excessive mobility of the uterus are readily explained by irritation of the hypogastric plexus of the sympathetic, just as he is satisfied that those of movable kidney are due to the irritation of the solar plexus.

Treatment of the condition is called for only when symptoms

exist which can be clearly traced to the *excessive mobility* of the uterus. The treatment, as already stated, resolves itself essentially into that of movable retroversion of the uterus. It is in this class of cases, usually treated for retroversion of the uterus, that the pessary probably effects its small proportion of cures of retroversion. The excessively movable uterus is easily placed and readily maintained in anteversion. I have succeeded, by shortening the round ligaments, in permanently curing all the cases that come under my care who preferred operation to treatment by the pessary. The pessary and inguinal shortening of the round ligaments are the only allowable therapeutic measures. Opening the peritonæal cavity and creating adhesions in any part thereof, as is done in all other retroversion operations except inguinal shortening of the round ligaments, is for reasons which I have elsewhere* formulated not for a moment to be entertained.

* Edebohls: The Indications for Ventral Fixation of the Uterus. Medical News, March 14, 1897.

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THE RESULTS OF ONE HUNDRED AND FORTY-SEVEN
OPERATIONS FOR RETROVERSION OF
THE UTERUS.*

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The paper presented to this Society two years ago, entitled "*Ventrofixation versus Alexander's Operation*," was based upon an experience of twenty-eight cases of the former and of twenty-one of the latter; the object of the present communication is to report the results in these and an additional number of sixty-six ventrofixations and thirty-two Alexander's, making in all ninety-four ventrofixations and fifty-three Alexander's. During the last few years, many able operators and writers have so well defined the indications for each of these operations that little more need be said. We are nearly all agreed that ventrofixation is contraindicated in every case in which there is simply falling back of the uterus, without any disease of the tubes and ovaries, and consequently without any adhesions. It is not contraindicated because it would not cure such cases; on the contrary, it gives excellent results; results so satisfactory and so certain that some operators advocate this operation as the sole and only one for retroversion or prolapse, even when the uterus is easily replaced and the appendages are healthy. The great majority, like the author, consider that it is unjustifiable to open the abdomen, even though this entails no death rate, if the abnormal condition can be cured by any other means. That it can be cured by some other means, has been thoroughly proven by experience, and that, too, by an operation which, while having no primary mortality at all, is even devoid of the two or three objections which can fairly be made against ventrofixation. In the hands of the skilled aseptic abdominal surgeon, both operations are equally devoid of danger to life; but should a slight break in the aseptic chain

* Read before the American Gynæcological Society, May 6, 1897.

occur, the danger of death would be much greater in ventrofixation than in Alexander's operation, because the peritonæal cavity is not opened in the latter operation at all. There are two or three rare but real dangers in ventrofixation which cannot be denied; one, that the bowels may get caught between the uterus and abdominal wall, as happened in a case of Dr. Farrell's, of Halifax, the patient having narrowly escaped death from obstruction of the bowel; she was saved by putting her in the Trendelenberg posture and shaking her, when the symptoms of obstruction suddenly ceased. The other dangers are inherent to abdominal section in general; namely, obstruction of the bowel from the latter being caught in a stitch, or becoming adherent to the abdominal incision. Although both the accidents are comparatively rare, nevertheless numerous instances have been reported, and their possibility must be recognized, if not in the hands of the expert, at least in the cases of the average operator. There is a third objection—ventral hernia; but as it should never happen, and as there is an equal possibility of inguinal hernia after Alexander's operation, we must put this risk on each side of the scale in weighing the pros and cons of the two operations. On the other hand, Alexander's operation is positively contraindicated in every case of retroversion in which the uterus is adherent; and in the inability to diagnose adhesions lies the commonest cause of failures of the operation to relieve. Any one, of course, can recognize them when the uterus is retroverted and absolutely immovable. But in many cases the uterus is apparently movable, and by the aid of the sound, and even by manual palpation, it can be brought up to the symphysis; but when the sound or the fingers are removed, it immediately springs back into its abnormal position. Such a condition absolutely contraindicates shortening of the ligaments; for if we were to open the abdomen we would find one or many layers of adhesions, which are put upon the stretch the moment we attempt to draw the fundus forward, and the steady pulling which they would keep up would pull the shortened ligaments out of their anchorages. So that it may be laid down as a good rule never to attempt shortening of the ligaments unless the uterus can be easily put up, and unless it will stay up, for a few minutes, at least. The question has often come up for discussion, whether Alexander's operation is suitable for prolapse, and some have taken the ground that it was not. The writer's experience, however,

shows that it gives a very satisfactory result in these cases, especially when combined with amputation of enough of the cervix to reduce the uterus to its normal weight, and with operation on the anterior and posterior walls to close and strengthen the pelvic outlet. It would be a mistake to call upon the ligaments to carry a heavy uterus; they were only originally intended to draw the fundus forward during powerful contractions of the abdominal muscle, so that the intestines might be forced behind instead of in front of the uterus. Therefore, in twenty-two out of the fifty-three Alexander's operations, the uterus was dilated and curetted, the cervix amputated, the anterior vaginal wall narrowed by Stoltz's operation, and the perinæum repaired by Emmet's, Tait's or Hagar's method. In four of the cases Alexander's operation was performed for procidentia and for retroversion; in one case (No. 27) it was done for ante-flexion with very good results. Our late lamented friend and fellow of this society, Dr. Holmes, of Portland, Oregon, a few years ago advocated ventrofixation for ante-flexion, and his plea was so ably advocated that the writer resorted to Alexander's operation to carry out his idea, that if we could hold the fundus up, the vagina would pull the cervix down, and thus straighten out the uterus. There may possibly be a great future for these two operations for this most intractable condition, the treatment of which is beset with so many dangers and difficulties. The writer's experience with the stem pessary has been most unpleasant; straightening the bent uterus by pulling on its two ends would seem to be the most reasonable method of all.

We now come to the question of ease or difficulty of performing the two operations, an important factor in coming to a decision as to which is preferable. On this point the author now takes the ground that, given the same case to operate upon—that is, one uncomplicated by adhesions—either operation is as easy as the other. Two years ago his position was quite different; for at that time, while ventrofixation only required twelve to fifteen minutes from the first incision until the last stitch was tied, Alexander's operation sometimes required as much as an hour, and even then be abandoned, while he has been present at many operations by distinguished surgeons who were in the same mortifying position. One surgeon, who is afraid of nothing in general surgery, has such a horror of this operation that he has decided never to attempt it

again, owing to failure to find the ligaments even after an elaborate dissection. Another, the pioneer in gynæcology and abdominal surgery in Canada, attempted the operation only once, but failed to find the ligaments or to sew up the external pillars of the external inguinal ring, with the result that the woman soon after had two enormous inguinal hernias, which she refuses to have repaired. The writer has tried Kellogg's beautiful method without success, although he can corroborate the testimony of Edebohls, having, like him, made a journey to Battle Creek, especially for the purpose, and has seen Kellogg shorten the ligaments under cocaine in nine minutes. It was only since the discovery of a method which will now be described that he has been able to find the ligaments invariably and quickly. After an experience of about forty operations performed according to this method, the writer is able to find the ligaments and draw them out in from half a minute to a minute and a half each. He believes this method to be original, never having seen it described in any of the journals nor witnessed its performance by any operator. It is, however, exceedingly simple and easy, so much so indeed that it can almost be performed with the eyes shut or by the sense of touch alone.

Operation.

The skin is shaved and carefully disinfected in whichever manner the operator prefers. The tip of the index finger is then pressed firmly down on the spine of the pubis, when in most cases the latter can be felt. An incision directly over this spot is then made, diverging at its outer end about thirty-five or fifty degrees from Poupart's ligament. The incision must go through the skin, superficial and deep fascia, but no further; and even, for fear of severing any of the fibres of the intercolumnar fascia, the last part of the incision should be made with the handle of the scalpel. The pearly glistening fibres of the external oblique will then be seen, with the intercolumnar fibers running across them, holding the pillars of the ring together; some fat will appear bulging up between the pillars, and if the finger-tip be pressed upon this fat, the latter will recede into the ring. The secret of success now lies in putting aside the knife and not cutting through this fat down to the spine of the pubis, but in keeping it intact, for if this fat be caught up in a Pean's forceps

and pulled upon, the round ligament will be drawn up. With the tip of the left index finger covering the ring a pair of closed Paen's forceps is slipped into the canal under the finger and opened, when the only things in the canal, namely, the round ligament and the nerve running with it, are caught in the forceps and gently drawn out. All instruments are now laid aside, the separation of the ligament from the nerve and from the fascia which connects the ligament to the canal, being accomplished by the fingers, which are quite strong enough to pick out the ligament, but not sharp enough to cut it. No matter how small it may be at the ring, on drawing it gently out it will be found to be of good size. The ligament is drawn out until the peritonæal covering appears, and this is stripped back with the fingers. The ligament on the opposite side is then found and drawn out in the same way. In forty-nine of the author's fifty-three cases the ligaments were anchored in the following manner: while gentle traction of the ligament is made by an assistant, a fine silkworm gut suture is passed through the transparent anterior wall of the canal, taking in half of the round ligament and tying it. The next stitch takes in Poupart's ligament, half of the round ligament, and then the superior pillar of the ring, and this, when tied, brings together the pillars as well as fixes the round ligament. If any opening can still be felt, another stitch can be placed. If the wounds in the skin are brought together with silkworm gut interrupted sutures, the cut end of the ligament is included in one of these; but a much prettier result is obtained by closing the skin with a subcutaneous silkworm gut suture fastened at each end. Primary union is the rule and there is no scar nor stitch hole. The advantages claimed for this method are:

1. A one-inch incision in the skin is sufficient.
2. There is no need of dividing the fibers of the intercolumnar fascia which is the sole support of the external inguinal ring.
3. The round ligament can be quickly found, as the natural position of the structures of the ring is not disturbed.
4. The ligaments can invariably be found, although it is maintained by some that the round ligament is sometimes absent; it is more probable that it is always present, but being split up, it becomes so weak that it breaks, or in some cases some other structure is mistaken for it. There is nothing in the inguinal canal except the round ligament and the nerve, and if the knife and scissors be

laid aside as soon as the deep fascia has been cut through, and neither the canal nor the ligament be wounded, then in grasping whatever is in the canal we are sure to find the round ligament.

5. By the method above described hernia would be impossible, at least as a result of the operation, for not a fiber is cut that supports abdominal pressure. Even if the woman had a hernia before it would be radically cured by Alexander's operation performed according to this method. Silkworm gut is employed because catgut does not last long enough to give permanent strength to the ring. One relapse occurred in Case 14 which was due to the employment of silkworm gut sutures which were only left in two weeks, instead of permanently; but in this case there was no hernia and she was subsequently cured by ventrofixation.

In Case 2, both ligaments broke during the Alexander's operation, which was a failure. Five months later ventrofixation was performed with perfect results. Case 19 was also a failure, owing to breaking of the ligaments, but the canals were carefully closed up so that no hernia occurred. Indeed, inguinal hernia has not occurred in any case. In Case 50 the left ligament broke while stripping back the peritonæum, but the right ligament was strong and was trusted to hold the uterus forward, which it has done satisfactorily. Case 54 was peculiar, because she was sent to the author for operation for fibro-cystic tumor of the uterus. On careful examination retroversion with some disease of the adnexæ was diagnosed. The abdomen was opened with the intention of performing ventrofixation, but on introducing the hand into the abdomen, the uterus was found to be pregnant a few weeks, and sharply retroflexed and locked under the promontory of the sacrum. Under the circumstances it was deemed advisable to perform Alexander's operation instead, which was done in the manner described. The left ligament broke while stripping off the peritonæum, but a Pean forceps was slipped into the canal and through the internal ring between the layers of the broad ligament, where the round ligament had been; the cornu of the uterus was reached and the stump, about half an inch long, was brought up to the internal ring and stitched there. When the other side had been anchored, the position of the uterus, as seen from the abdominal opening, was excellent. In two other cases, Nos. 41 and 48, the ligaments were crossed under the skin of the pubis and each one fastened to the external rings of the

opposite side, as well as being fastened to its own canal. In both of these the result was all that could be desired, the strain being taken off the canal and divided over a larger area. Cases 3, 7, 13 and 21 have had children since with perfectly normal labors and no return of retroversion.

Nearly all of the fifty-three cases have been seen since, and with the exception above noted the uterus was in good position. A few of them are no better for the operation, because ovaries remained which would have been removed if ventrofixation had been chosen instead of shortening of the ligaments.

Ventrofixations.

Of the ninety-four cases thus treated, the first was performed on the 10th of March, 1890, on a Caughnawaga squaw sixty-two years of age, whose uterus had been out of her body for some years. Six years later she was in good condition with the uterus up, and she was able to do hard work. In forty-seven, or just one half of the number, one or both ovaries and tubes were removed. In twenty-one both ovaries and tubes were removed; in twenty-six one ovary and tube was removed. In most of the cases the uterus was retroverted and fixed in the hollow of the sacrum, owing to leaky pus tubes having set up repeated attacks of pelvic peritonitis, forming layer upon layer of adhesions binding down the ovaries and tubes under the uterus, and formed of inflammatory exudation, which in time becomes organized. The condition of many of these women was pitiful, as working or walking or performing their marital duties caused excruciating pain, and was often followed by peritonitis, which confined them to bed for several weeks. The ovaries were generally fixed about two inches from the entrance to the vagina, and the uterus about three inches. Owing to their faulty position, the circulation of these organs was very bad, causing them to be exceedingly congested and tender. Because the ovaries and tubes had been diseased for a long time, they were removed; but there was another reason for doing so, for in order to lift the uterus up it was absolutely necessary to dig the ovaries out of their bed of adhesions, and in doing so they were frequently torn and bruised very seriously. In fact, in some of the cases the writer's strength was exhausted in doing so; while in one case neither he

nor his colleague was able to break the adhesions, so that ventrofixation was not performed. In one case, however (No. 15), the lady refused permission to remove her ovaries, so they were left in, much against our judgment, covered with peritonæal adhesions and considerably torn. To our surprise this lady, who had been under the best of treatment which Montreal affords for several years and still remained a sufferer, is now in perfect health, menstruation is regular and painless, and coitus is also painless. She is now a great walker, and has testified to her gratitude by collecting a large amount for one of our charities. Cases 7 and 41 also refused permission to remove the ovaries; accordingly, although cirrhotic and cystic, they were left in. Both of these have regretted this ever since, and one of them has stated that we should have disregarded our promise when we saw what the result would be.

Case 36, although her uterus was dilated, curetted, and had its cervix repaired as well as the perinæum, and the uterus was fastened to the abdominal wall, says she is no better for all our trouble. Her physician intended that we should remove the ovaries, which had pained her for years, and before her operation we had diagnosed them as diseased, being very small and hard, yet when we came to remove them one of our colleagues on the staff of the hospital pleaded strongly for conservative surgery, kindly promising to be responsible for the consequences if they were left in; it was finally decided to do so, and the result is that the patient has continued to reproach both her physician and the operator ever since.

In Cases 17 and 35, the result has been perfect, although the ovaries, not being diseased, were not removed. In these cases Alexander's operation could have been performed, but we felt more sure of ventrofixation. Case 17 has been in a situation as housemaid ever since two months after operation in January, 1895; and Case 35 rides long distances on the bicycle, and is in perfect health, although for years previously she was an invalid. In Case 16 the patient was suffering severely from dysmenorrhœa; her uterus was dilated and curetted, one ovary and tube were removed and the uterus was suspended from the abdominal wall. It is to be regretted that the other ovary was not removed, as she was employed in a factory, and she has lost her situation because she is laid up in bed every month with dysmenorrhœa. Cases 18 and 19 were both working women who supported themselves and their families by

hard work. In both cases the womb had been out of the body for several years; as no pessary would stay in, it was only by wearing a tight perinæal band that they could accomplish their work. In both cases the cervix was ulcerated; one was aged forty-five and the other fifty-eight. In such cases most gynæcologists in Europe and some in America advocate vaginal hysterectomy; but this seems a serious operation for a condition which can be cured by ventrofixation. Nothing could have been better than the results in these two cases; although in one of them the buried silk ligatures suppurated for a time, this did not prevent her from going to work five weeks after the operation and working hard ever since, with, she assures her doctor, great comfort and satisfaction. In both cases the perinæum was at the same time repaired. In Case 33 there was no retroversion, but ventrofixation was performed after the removal of a large papillomatous mass from Douglas' cul-de-sac; the uterus dropped into the hollow, and lest this might have interfered with the satisfactory results, the uterus was fixed to the abdominal wall. Her operation took place nearly a year ago, since which she has been heard from frequently and always in the best of health. In Case 53 two large pus tubes of seventeen years' standing were removed, leaving a large cavity which the uterus might have dropped into had it not been stitched up. She has also been seen frequently in excellent health. Cases 59 and 72 have been under my care for a long time for retroversion, but would not consent to ventrofixation; while attending them they became pregnant, and as they were examined twice a week an enlargement of one tube was soon noticeable, and was diagnosed as tubal pregnancy; and in fact, the treatment seemed to have improved them enough to enable them to become pregnant, as they had been sterile for many years. In each case a foetus four inches long was taken out of each abdomen, together with several quarts of blood, and both made good recoveries. One case was followed by a ventral hernia, so a year later the abdomen was reopened during which operation the uterus was seen to be connected to the abdominal wall by a fibrous cord of the thickness of a lead pencil, but no trace of the silk stitches could be seen. This shows that the connection is not always an immovable one, and that it may be more properly termed *suspensio uteri*.

Another, Case 95, had been suffering ever since the week of her marriage ten years ago, when she had contracted gonorrhœal sal-

pingitis and pelvic peritonitis. The uterus was found to be firmly held down in the hollow of the sacrum. The omentum was adherent to the brim of the pelvis, and was much lacerated in separating it. Great force was required to dig the ovaries out of their bed. The ovaries were torn in shreds and had to be removed. Ventrofixation was performed, special care being taken that the intestine was not caught between the uterus and the abdominal wall, nor in any of the stitches of the wound. All went well until the ninth day, when the patient, who had been eating heartily of light diet, suddenly refused her food. On the tenth day she began vomiting, and kept it up steadily until the eleventh day, when the vomiting became faecal. An obstruction of the bowel was diagnosed. Although the day was Sunday she was immediately reopened, when the bowels were found to be adherent to the stump of the omentum and an inch lower to the brim of the pelvis, thus causing a kink, above which they were distended and below which they were collapsed. The adhesions were freed, the raw surface was closed, and the patient is making a good recovery for so serious an operation. A good opportunity was afforded to see how the uterus was fixed. In this case the union was very firm and it would have been impossible to have torn it away from its anchorage in its new but normal position.

A few words should be said about the stitches for fastening the uterus to the abdomen; the writer is now using a very fine size of silkworm gut, which appears to be much less liable to cause supuration than silk. The results have been most gratifying in all cases when at the same time the tubes and ovaries have been removed. If they are healthy, there will be no adhesions, and ventrofixation should not be done at all; on the other hand, the results of the Alexander's operation have been satisfactory in all cases in which the tubes and ovaries are healthy. When they are not healthy Alexander's operation should not be done.

The writer is frequently asked what would be the result if pregnancy occurred in a woman whose uterus had been ventrofixed; and for a long time he was unable to answer from actual experience, until Case 18, then forty-five years of age, became pregnant soon after her ventrofixation, and although the child was born dead, this was not in any way due to the confinement, which her physician tells me was a perfectly normal one in every way. The mother suffered

no inconvenience while pregnant, and went out washing by the day up to the very last. One other case, No. 58, had a normal pregnancy, absolutely without inconvenience, and was easily delivered of a healthy child still alive. As a rule, however, the author has removed ovaries in nearly every case in which the patient was bad enough to require ventrofixation, and if the operation were only performed in those cases, reserving all others which could possibly become pregnant for Alexander's operation, the question of pregnancy after ventrofixation would never occur.

MENTAL DISTURBANCES FOLLOWING PLASTIC
OPERATIONS, WITH REPORT OF CASES.*

BY JOHN A. LYONS, M.D., CHICAGO.

Mental disturbances following plastic operations are uncommon. Although the mental results are the opposite in these cases to that usually obtained, yet I consider it as much my duty to present them as it would be if they were each a brilliant success.

Had the mental faculties of my patients been disturbed previous to operative procedures, and had recovery followed the treatment, then I should have considered the results obtained common, and would perhaps have ignored them as cases unworthy of a second thought. The contrary, however, being the case, I deem them of sufficient interest to report.

Case I. Mrs. S., aged thirty-four, American; married twice; had two children by first and one by second husband, the last child being two and a half years old. Since the birth of this last child she claimed to have suffered from very severe occipital headache, general debility, constipation, loss of ambition, with a slight or variable appetite followed very frequently by sour gaseous eructations, and especially with severe leucorrhœal discharge, accompanied by dysmenorrhœa during the entire menstrual period. The patient seemed very much above the average in intelligence, of exceedingly good physique, not naturally of a nervous temperament, but she

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claimed to have become quite so in the last year or two. The lungs were in perfect condition, and there was no organic lesion of the heart, this organ being normal in size and position, but slightly irritable. The stomach was apparently normal in size, but tender, upon palpation. The liver, spleen, and kidneys seemed also normal in position and size. The urine was normal in amount and constituents. Abdominal and pelvic examination were negative except for an enlarged uterus, evidently subinvolved and endometric because of an exceedingly large bilateral laceration of the cervix, the os admitting an index finger with but little force, but with considerable pain. An operation was advised, to which both husband and wife consented. The operation consisted in thorough curettage of the uterine canal, and trachelorrhaphy. The uterus was well packed with iodoform gauze, which was removed at the end of forty-eight hours. The silkworm gut sutures which were used in the cervix were removed eight days later, as perfect primary union had taken place. The os being patulous a uterine sound was easily introduced into the canal. For the following five months the patient failed to menstruate, and she was thought to be pregnant, as her abdomen became apparently larger and she complained of morning nausea, with many other symptoms of pregnancy. Following the operation her mental faculties were more or less disturbed; she was unable to oversee her housework, and was frequently noticed about home perfectly oblivious of her surroundings. Her children, whom she formerly loved most dearly, now disturbed her so much that they had to be removed frequently from her presence. This state of affairs continued for about four months, when I was suddenly summoned and found the entire family in a state of extreme grief, with my patient suffering from acute mania, due to the announcement by telegraph of the sudden death of a beloved and only brother, who had died from nephritis, of which he had suffered for years, without informing any member of the family except this sister. Within two months from this date the patient's mind, which had been in an exceedingly critical condition for several days immediately following his death, entirely recovered; not a trace of dementia was left. A peculiar incident, however, occurred about five weeks after the brother's death. She came to my office suffering from pre-menstrual symptoms and fearing abortion. As there was a slight bloody discharge she wished to know the

progress of her child in utero. Upon examination I found the uterus non-pregnant and perfectly normal in size and position, and the pelvic organs were almost perfectly normal. This knowledge caused some temporary grief, but no dementia followed, and the menses appeared shortly after, perfectly normal and painless. The question is in this case, had the trachelorrhaphy anything whatever to do with the mental disturbances; or was the brain affected because of the knowledge held secret by her for a long time of her brother's nephritic condition, with the protracted illness before operation, responsible? And was the amenorrhœa, in the absence of lung, liver, stomach, kidney or other trouble, caused by the operation, from fear or shock? Or was it due to her own suggestion and excessive desire to bear children, in the hope that she might present a male child to her second husband, which desire I know was very strongly developed?

Case II. This was a case operated on for laceration of the perinæum, in which dementia followed repair twenty months ago. The patient was a German woman, aged thirty-one. She had two children, aged twelve and ten years respectively. She had never been examined by a physician, excepting the one who delivered her of both children, and had not been pregnant since the birth ten years previously. Upon examination, a complete perinæal tear was plainly visible, extending up the rectum almost to the vaginal vault, so that she had incontinence of gas and fæces. When informed of her condition, and that an operation was necessary, she and her husband readily consented, and agreed to go to a hospital, a proposition to which she first strenuously objected.

As this was the worst case of perinæal laceration and of the longest standing, I had seen, much less repaired myself, I was very much gratified in obtaining a beautiful result. She obtained perfect control of the sphincter, so that I felt the chances here for a rapid and early convalescence were good. To my surprise and without any known cause, in less than two months her mind was completely unbalanced. Before operation, in so far as her strength would permit, she had been a loving, careful, saving, cleanly housewife. Now, however, she had become morose, gloomy, and exceedingly careless as to anything that happened about her house or with her family. Besides, she seemed to have lost all knowledge as to the value of money, in fact, would undoubtedly pass it by, either at home or

upon the street, as unworthy of notice; whereas, formerly she was looked upon as an exceedingly penurious woman. Sleep was now almost out of the question with her, unless petted or soothed to sleep by her husband. When upon the street she imagined all men she happened to see were following her with evil intent, so that it became necessary to have an escort with her while taking her morning and evening walks. The company of Christians, or indeed, even conversation upon Christianity in any form, was never to her liking. Now, however, she had become a most devout Catholic, attending church daily. During her lucid moments she was apparently conscious of her feeble-minded condition, and accused me upon every opportunity of being responsible for it, often saying that if I had not proposed operation, her mind, at least, would have been right, and she could have managed the other trouble, as she had done for ten years. This state of melancholia or mania continued with her for some five or six months, and as mysteriously disappeared as it had come, and nine months ago I delivered her of a thirteen-pound boy, by actual weight, without even the sign of a perinæal tear, although I had been in almost mortal dread of the whole perinæal body tearing even worse than it had been before by her exceedingly large child. I account for this saving of the perinæum in two ways: First, when operating, after thoroughly removing the cicatricial plugs, I approximated the rectal tissue carefully with catgut sutures, then built the perinæal body up by the flap-splitting method after the manner of Tait, with very strong silkworm gut sutures. Each suture, however, included the integument, which procedure is not advised by Mr. Tait, as more pain is likely to follow. But the sutures introduced as he advises are frequently very difficult to remove, hence, I usually include the skin. The Tait method of perinæorrhaphy does not, in my opinion, give the strong supporting perinæal body obtained by the Emmet, the Martin, the Simon-Hegar, the Alexander, Duket and other operations. Yet, after his method, the perinæum is less likely than they to rupture again at some future parturition. My experience, therefore, would lead me to endorse the statement of Mr. Tait, who claims that lacerations of the perinæum do not easily result during parturition after his operation.

The second and most important reason why this perinæum was not torn I attribute to the fact that, previous to the perinæal stage

of labor, I very emphatically informed the mother that I wished her to control her pains exactly as I commanded. And the result was indeed wonderful, for when I thought she had given sufficient force to each pain to admit of very slow and gradual dilation, the word "hold," as agreed upon, was given and acted with apparent hypnotic effect, for she would then immediately hold the pain and gradually allow it to ease off, resting quietly between them. Had this not have been done, her tendency was to force the pains, so that she might obtain a rapid delivery of her child, thinking that by so doing she would the more quickly get through suffering. I have used this means of delivery in obstetrics in lieu of chloroform of late years in most all cases where I thought the patient susceptible to my will power, and I feel thus far exceedingly well pleased with the results.

In connection with the cases here reported, I have found a perusal of the literature upon mental depressions and insanity exceedingly interesting. The kind of mental disturbances, as well as the causes thereof, are shown to be, as a rule, different in the different sexes, and at the different ages of the same sex.

While the little ones are passing on from childhood to puberty, during the transformation of their sexual organs, it is not uncommon to find boys suffering from mental disorders, usually depressive in character; Rohe says they are languid, docile, and downcast. While girls, at the pubescent period, are more likely to take on paroxysms of hysteria; they become noisy, maniacal, indecent, erotic, and have frequent convulsive seizures. In fact, the so-called "hysterical" element is so frequent in the pubescent insanity of females, that it almost stamps it with this characteristic form of mania.

In adult life the general pareses and insanities of men may be traced to exposure to extreme heat or severe cold, as, for instance, in polar expeditions, etc., also to overheated, poorly-ventilated houses or work-shops, to traumatism and especially alcoholism, with or without excessive sexual indulgence. The chloral, cocaine, morphine or other drug habits are also responsible.

On the other hand, while in female adult life there are some who allow themselves most unfortunately to suffer from these same causes, yet in the majority of women, of both young and middle life, the cause, as a rule, can safely be attributed to malformations, with a lack of or undevelopment of some portion of the sexual organs, these conditions preying upon their minds until demented.

But a large per cent. are due to disturbances of menstruation, especially amenorrhœa, either from chronic diseases, such as phthisis, or subsequent to an attack of typhoid or other acute fever, or possibly in young girls who have been indiscreet, and who fear exposure because of an illegitimate pregnancy. Dysmenorrhœa, with or without menorrhagia, is also very frequently the disturbing cause of acute mania, which later will almost invariably and sometimes completely improve upon the correction of these disturbances.

Many eminent physicians of both state and private institutions for the insane now believe that a large proportion of the cases of so-called hysterics and hystero-epileptics, who enter asylums and become apparently incurably insane, have some organic affection preceding, and possibly the sole cause of the mischief. It may not necessarily be diseases of the pelvis or parturient canal, but lesions of any kind anywhere about the body may cause these disturbances. A nervous tendency may be inherited, predisposing the subject to hysteria upon the slightest provocation, such as a fit of passion, or perhaps "shock" due to the sudden death of a child, a husband, some friend or relative, or a meeting with some accident, as was most horribly illustrated recently following the death of the noble women at the Paris charity bazaar, many going insane immediately upon learning of the death of their loved ones. Even the receipt of good news suddenly conveyed has frequently caused insanity or even death.

About ten per cent. of all cases of insanity occur in women between puberty and the menopause, and if statistics were more complete, I think this proportion might be divided between the gestational, the puerperal, and the lactational periods, especially proportioned at about 2.50, 2.25, and 1.25 per cent. Many acute attacks of mania I have no doubt might be reported during the gestational period, which are withheld, both by the physician and the patient's friends, out of respect for patient and her offspring, they fearing a public knowledge of the facts.

Within the last three months I delivered a woman who had three very severe attacks during the gestational period; one immediately after impregnation, one when about four and a half months pregnant, and one just before delivery. The last attack cleared up immediately after the child was born, with absolutely no return since.

She is now so happy, clear-minded and strong, that I feel justified in attributing the attacks to her pregnant condition.

The immediate cause of insanity during the gestational period is not thoroughly understood, at least, I have not been able to reason it out to my entire satisfaction. Siebold says there is responsible for it all stages of debility, either induced before parturition by want, intemperance, disorders of nutrition, or where rapid successions of pregnancies and lactation are carried on simultaneously. That is to say, the woman has children so frequently that she may be pregnant several months while nursing her last child. I have seen this happen often, and lactation continued frequently even up to and beyond viability of the fœtus, and now I recall one case of severe melancholia bordering upon insanity from this cause alone. I delivered the woman twice within ten months of two full-term children. Weakness from hæmorrhage, or exhaustion from any disease followed by pregnancy, may cause insanity, especially in exceptionally young or exceedingly old primaparæ.

During the puerperal stage sepsis is the predominating factor. Olshausen has shown by clinical experience beyond the peradventure of a doubt that insanity is caused by pathological conditions of the parturient canal, which favor the absorption of septic material, and he is supported by such noted authorities as Fordyce Barker, John Siebold, Playfair, and Hansen.

During the lactational period, and afterward the acute and chronic conditions which follow as sequelæ, the neglect of these pathological conditions are responsible. Such as recurrent attacks of pelvic peritonitis, gastritis, endocarditis, etc., etc.

A pathological condition, therefore, of the parturient canal, the pelvic or abdominal viscera, due either to trauma during parturition or secondary to any pathological condition, may cause dementia. But repair or cure of these conditions or disease will usually be followed by an early improvement, or possibly complete cure, of the mental disturbances.

For instance, Rohe, Manton and Gillman claim that by castration, especially for the removal of diseased ovaries, many patients supposed to be hopelessly insane have been very much improved and some cured; and the moral sense of the patient is elevated, she becomes tractable, orderly, industrious and cleanly. In support of

this view in Europe are recorded such authorities as Pozzi, Charcot, Hansen, Playfair, Allbut, Babinski, and J. Y. Simpson.

The three cases I have reported have, however, been diametrically opposed to the general principles of this rule, and it would at first sight appear necessary to record their mania as due to operative interference. This has frequently been done by opponents to surgery, and had these cases fallen into other hands before their complete recovery, such a fact would undoubtedly have been believed, and perhaps so reported. For such at first was the belief, to some extent, of the patients and their friends. But when later they returned to perfect health all such ideas were abandoned, and the return to a normal state of health is now fully credited to their operations, while their dementia is attributed to their pathological condition, requiring operation.

I am also inclined to believe that in the first case the exhaustion previous to the operation and directly due to the torn womb, combined with the knowledge of her brother's kidney trouble, was responsible in a great measure, and perhaps entirely so, for her mania. The amenorrhœa was due, I believe, to what psychologists call suggestion.

In the second case there was absolutely nothing, so far as I could determine, but the weakened condition of the general health, followed by the operation, responsible for her mental disturbances. The fact of her having borne no children from the time the laceration took place until immediately after it was repaired, a period of over ten years, must be taken into account, and may class it among the cases of climacteric insanity. However (if you will pardon the digression), it shows clearly that a healthy spermatozoon had never during all these years entered the uterine canal because of contamination with fœces or decomposed secretions. For upon the elimination of these foul secretions from the vagina, impregnation almost immediately followed. If this was not the cause of her ten years' sterility then her vitality was so much reduced that she had not a healthy ova to impregnate; or being impregnated, this new formation became implanted in an endometrium devoid of nourishment.

As to the treatment of these cases for the dementia, no special line was followed. If a tonic seemed to be indicated, it was given. If a sedative, such was given. And by your permission, at this

point, I would like to emphasize the effect of sedatives upon these demented conditions. The patient I before alluded to as having three attacks during the gestational period of pregnancy, I was called to see two weeks before labor fully set in. I found the os dilated at least three-quarters of an inch, with apparently normal labor pains, five minutes apart. She was, I supposed, undoubtedly in labor. I ordered very large doses of chloral and bromide, about two drams of each every half hour while awake, to soften the cervix and shorten labor, which they usually do most beautifully in my hands. Having retired for rest, about six hours afterward I awoke and ran to my patient, wondering why I had not been called to deliver her, when to my surprise she slept most peacefully, with the os perfectly contracted, an effect exactly opposite to that expected, and she had been given about two drams each of bromide and chloral. After two days' rest she got up and did some of the housework for many days before labor again started to completion.

These sedatives, therefore, I look upon as indicated in threatened labor, when such a condition is due to a nervous phenomenon. It will save the child by quieting the nervous system, and thereby also close the cervix to a normal condition. On the other hand, if the gestational period is complete and labor is normal they will just as surely soften the cervix and hasten the second stage of labor, with very much less suffering to the mother.

My experience, also, is that in mental disturbances from any cause, very large doses are not only necessary to quiet the patients, but are, as a rule, exceedingly well borne by them.

WHEN TO AMPUTATE IN PREFERENCE TO THE RE-
PAIR OF A LACERATED CERVIX BY THE
USUAL METHOD.*

BY THOMAS ADDIS EMMET, M.D., NEW YORK.

Thirty-five years have already lapsed since "Emmet's operation" for the repair of the lacerated cervix uteri was first practiced. The operation has now so long stood the test of professional criticism and observation that the necessity does not longer exist, in this country at least, for the author to stand on the defensive against the prejudice and misrepresentation which once existed.

The verdict of those who have had the largest experience, and who have consequently given the closest observation to the result, is a unanimous one that, with properly selected cases and with the operation properly performed, better results can be obtained through its means than by any other.

My own experience has certainly been as great with this operation as that of any other individual; yet my object on this occasion is not to present the result of my observation in full but to point out a method by which certain conditions, resulting from laceration of the cervix, may be remedied and which is sometimes more reliable than the usual operation.

For many years I held the opinion that it was possible, in almost every instance, by careful local and general treatment to restore in time the lacerated tissues to so near the normal condition that, when the operation had been properly performed, complete restoration would eventually take place with the result of bringing about involution of the uterus.

But I am now of opinion that there are exceptional cases to this rule, where under certain conditions it is better surgery to amputate a portion or the whole cervix, provided the diseased tissues are completely removed and the wound afterwards treated in the manner I shall describe. This particular mode of after-treatment is all-important because amputation is not sufficient of itself, if the removal

* Read before the American Gynæcological Society, May 6, 1897.

be done with the cautery or if the stump be left to cicatrize. My views in reference to the effect frequently resulting from the presence of cicatricial tissue in erectile tissue are well known to you. I need not therefore enter into further detail beyond stating the fact, based upon close clinical observation, that only a brief period of improvement will ever take place in the general health of the patient unless the principles of the procedure which I will present in this paper be applied.

In my public hospital experience I have for many years been forced to resort to amputation of the cervical flaps far more frequently than I have done in private practice. The method of treatment has not always been one of choice but of necessity, in consequence of the class of patients who were unable to spare either the time or the money necessary for a protracted course of local and general treatment.

Experience has also taught me that with another class of cases a like exception must frequently be made and without reference to the pecuniary circumstances of the patient. It is not a rare condition to meet instances in practice where nutrition has already become so much impaired, through the influence of the sympathetic system and in consequence of the long-existing injury, that no reasonable improvement can be made in the general health, so long as the local cause of irritation exists. My experience has clearly shown that we have no choice and that a prolonged delay often establishes the certainty of a tuberculous deposit taking place in the lungs. Some surgical interference should be early resorted to in these cases, after the least necessary period of delay has been devoted to the preparatory treatment, and whenever the diseased condition of the tissues make it possible to perform the accepted operation for preserving the cervix, the latter should be employed. But unfortunately the impairment of the general health is always due to the extent of the local injury and to its long existence, in which case it is difficult to obtain any reasonable response from local treatment; hence amputation is frequently the only alternative. And yet I am no less strong an advocate for following a conservative course by giving every patient the benefit to be derived from local treatment, with the object of removing all pelvic inflammation before resorting to any surgical interference and, whenever it is possible to save the cervix, I believe it should be done. The preparatory treatment is always to be regarded

as being of the greatest importance, since it is a fact fully recognized that the final result, after any surgical operation, must depend greatly on the extent of improvement which shall have been gained by previous preparation.

Yet we observe a certain number of cases where, from the appearance of the injury, it is often possible, at the first glance, to judge of the probable benefit obtainable from any local treatment and to realize that the result from any attempt at preserving the cervix must be futile. In all these cases it is found that the original laceration was deep, having extended often beyond the internal os, and that it generally involved more or less of the pelvic connective tissue and the vaginal walls. We learn that such an extent of injury has often existed for many years before the patient's general health suffered and before those reflex symptoms became developed which are commonly associated with so extensive a laceration. This long exemption from the usual consequences is due to the patulous state of the uterine outlet, which admits of frequent pregnancies and thus complete cicatrization is prevented. The parts partially heal at times and are then again and again torn open at the angles with each subsequent labor. Finally, from some cause, a longer interval occurs with these women between their pregnancies and with this rest, as cicatrization advances in the angles below, the circulation becomes more obstructed in the flaps. Thus the hypertrophy of the tissues is increased with the congestion produced from the obstructed circulation and they roll out more and more, as countless numbers of mucous follicles become distended and undergo cystic degeneration.

When we undertake the operation a certain amount of scar tissue is always found in the angles but, when this has been removed, it will be made evident that the flaps cannot be satisfactorily brought together in consequence of the cystic degeneration in the remaining tissues. Beyond question much can be done by means of local treatment for the relief of these cases, and frequently good effect can be brought about by carefully puncturing the countless number of cysts. But I have often been impressed with the fact that notwithstanding I had so far improved the condition of the tissues as to be able at the operation to bring together the flaps to my entire satisfaction, it still seemed in many cases as if it were bad surgery to shut in from proper drainage tissues which had been so long diseased.

In fact, I have frequently proved that this impression was correct when, after the operation, no improvement took place in the general condition of the patient, while on the contrary marked reflex symptoms developed and the uterus increased greatly in size. Then after an interval of several months in these cases I have resorted to amputation and thus eventually succeeded in restoring the health of the patient. On examining the tissues removed from such a case it is found that the old condition has remained unchanged, with the tissues still undergoing cystic degeneration. The condition is not unlike that found in a tonsil which has long been subjected to frequent attacks of inflammation and where the only reliable procedure is extirpation.

We also meet in practice a certain number of cases where the pathological condition seems very different from the one just described, and yet both may be but different stages in the same process of degeneration. The tissues about the cervix seem to the touch unusually soft and friable, and the necessity for amputation cannot at first be recognized. In fact, it is only when the operation for repairing the cervix in the usual manner has been commenced, by cutting into the angles to remove the dense tissue which will be found there, that the true condition can be understood.

In such a case the average operator who does not attempt to clear out the angles properly will not be likely to recognize the true state of the deeper tissues, as he will succeed without difficulty and to his entire satisfaction in apparently uniting together the flaps of the laceration with the sutures; but in reality he will have only drawn the thickened vaginal tissues as a prepuce over the cervical flaps, which have generally become atrophied. From such a procedure the patient cannot be expected to receive the slightest benefit. On the contrary a source of irritation will be established due to the retention of the uterine secretions within the pouch which has thus been formed over the cervical canal.

Under ordinary circumstances on cutting into the angles the existence of a more or less clearly defined portion of dense tissue situated there will be fully demonstrated and the mass can be frequently removed in a single piece. After this has been done, the two flaps can be as a rule approximated without difficulty. But when the tissues covering a lacerated cervix have seemed so unusually soft and vascular, I have often found on beginning the oper-

ation that the uterine portion of the cervix was not only atrophied but that the cervical tissue had become unusually dense in character; and, as a rule, this density was not limited to the angles of the tear but existed in less degree along the periphery than towards the uterine canal. The appearance of this cervical tissue is peculiar and unlike that generally found in the angles, which is always homogenous in appearance and like scar tissue. But the structures under consideration are even more indurated and seem granular in character with denser tissue filling in the interstices between the granular portions, and this cuts under the knife or scissors as would a portion of sole leather. With such a condition of the underlying structures it is never possible to remove all the disease nor to bring the parts properly together so as to leave a satisfactory uterine canal between them. And when the flaps are drawn together with considerable traction, as always must be the case, the sutures invariably cut out.

The indurated condition of the tissues I have described seems never to be fully removed by any local treatment, and I have seen several instances where epithelioma has rapidly developed while the patient has been under prolonged observation for local treatment.

I pointed out many years ago the close relation existing between epithelioma and a laceration or other injury of the cervix. Further observation may show what is the exact pathological condition existing in cystic degeneration of these tissues and may also determine at what time in their degeneration the liability is the greatest for the development of epithelioma.

I will now briefly describe the steps of the operation which I employ for the removal of the diseased portion of the cervix.

The uterus is to be first drawn down by gentle and steady traction to the vaginal outlet but never by a jerking movement which would be liable to rupture some blood-vessel, especially if there had been a previously existing pelvic peritonitis. The cervix must be steadily held by an assistant just within the vaginal outlet, as at this point the arteries will be placed enough on the stretch to lessen their calibre and thus render the operation to a great extent a bloodless one by diminishing the amount of blood going to the parts. A very important point at the beginning of the operation is to establish with some accuracy the line of vaginal junction, since the bladder will certainly be entered in front and the peritoneal cavity behind, if an

attempt be made to remove what seems to be the cervix, over which a mass of thickened vaginal tissue has been crowded. As atrophy frequently takes place, at an early stage, in the uterine tissue forming the lower portion of the cervix, the field of operation cannot be a large one at the beginning. The excavation however throughout must be made in the form of a cone, by cutting always towards the centre as a precaution against entering the bladder and peritonæal cavity. As the advance is made the bottom of the excavation must continually be drawn up throughout the operation to the vaginal level, for the purpose of keeping the parts in view for the operator and to check the bleeding. As each blood vessel is divided the neighboring tissues should immediately be seized by an assistant and held as a fresh point for traction, when the vessel will promptly retract and cease to bleed.

The cervix is to be removed piece by piece until healthy tissue has been reached and the most efficient instrument for the purpose is the pointed scissors which I devised some twenty-five years ago for clearing out the angles. These scissors are straight, but bent somewhat on the flat towards the points, and while the right and left pointed ones are at times useful, the "universal scissors," as they are now termed, from being shorter and stronger in the blades, are the best fitted for cutting into such dense tissue.

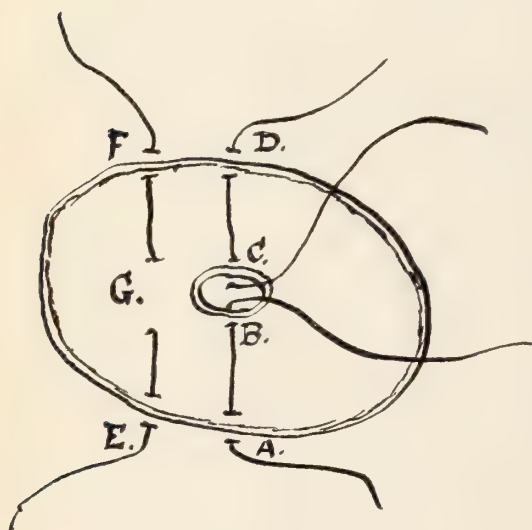
So far as I know to the contrary, Dr. Sims was the first to attempt covering the uterine stump with vaginal tissue, after he had removed the cervix with the knife or cautery. But the procedure did not prove a success as he practiced it, in consequence of frequent oozing of blood from under the flaps, requiring the use of a tampon, or from the formation sometimes of an abscess; the effect from either complication would be to tear out the sutures, while the entrance to the uterine canal, almost without exception, would close in time after this operation. But, from the first operation I witnessed, the advantage of covering the stump, with the expectation of thus obtaining primary union, impressed me greatly. Yet several years passed before I succeeded in perfecting the operation according to my views and I do not think that Dr. Sims ever employed the method devised by me.

The operation is fully described in my work "Principles and Practice of Gynecology" but, as the last edition has been some years out of print, the details may not be familiar to all present. The

most important features of the operation are to secure primary union, thus guarding against secondary hæmorrhage or the formation of an abscess, and to obviate the possibility of closure of the entrance to the uterine canal, as a direct consequence of the contraction due to the amputation, and to avoid a cicatrizing surface on the uterine stump.

After having removed the diseased tissue in the manner I have described the silver sutures are then to be introduced. The first one to be placed will be represented by A in the diagram. Here a portion of the vaginal tissue in the front flap in the median line, is caught up at A and passing over the intervening tissue of the cervical stump the needle is made to enter at B and is then brought out from the uterine canal. Just opposite, another suture is to be

passed from within through the edge of the uterine canal and brought out at C, then passing over the stump it is made to catch up the edge of the vaginal tissue and to be drawn out at D. If we follow the course of either of these sutures it will be apparent that when the front suture, for instance, is twisted the free vaginal surface must be drawn over the stump and as the edge of the uterine canal is a fixed point the portion at A will be secured at B; also when the posterior suture has been twisted in the same manner the portion at D will be drawn over



Mode of Introducing the Sutures in
Emmet's Amputation of the
Cervix Uteri.

to C. The result of thus securing these sutures will be that the edge of the divided mucous membrane on the vaginal surface, front and back, will be rolled over in contact with

the edges of the uterine canal and when primary union has taken place the natural caliber of the passage must be preserved. But before securing these, or any of the sutures, as many as may be deemed necessary should be first introduced on each side in the manner indicated by the sutures E F. Here the loose vaginal edge at E is first caught up and then the needle is made to include a sufficient portion of the uterine stump at G, on a line with the uterine canal, and in turn it should take up the vaginal tissue behind and be brought out at F. The only difficulty is in catching up enough of the uterine tissue in the centre of the stump to hold it firmly in contact with the flaps after the sutures have been secured. But this difficulty can be overcome by using a properly-shaped needle with the pointed end slightly bent on itself. The passage of the needle is greatly facilitated by snipping with pointed scissors a sulcus in the tissues at a sufficient depth in front of the advancing needle and from the bottom of this cut its point should be brought out to pass over to secure the vaginal edge.

After all the silver sutures have been twisted it will be made evident, by the introduction of a uterine sound for half an inch, that the canal has been left fully open, and it will be seen at the same time that the vaginal tissues have been drawn over the stump and firmly secured to its surface.

At the completion of the operation it is necessary that the uterus should be carefully replaced with the finger to its natural position and it must be done without displacing the ends of the sutures, which have been carefully bent down onto the vaginal surface. As soon as the uterus is replaced in its normal position the lateral traction then exerted in the vagina will keep the vaginal covering in close relation with the stump.

No surgical operation with which I am familiar yields a more uniform and satisfactory result than this one, when performed under the following conditions: The proper use of silver sutures, keeping the patient in bed for three weeks after the operation including the menstrual period when possible and not removing the sutures before the nineteenth or twentieth day, when the parts will have become firmly united and the uterus greatly reduced in size.

NOTE.—Since the writer's attention has been drawn more particularly to the subject of amputation of the cervix uteri, as a necessary operation after laceration, he has realized that a very important change for the better has

taken place within the past twenty years in the practice of obstetrics and that, in bringing about this change, he may have been indirectly instrumental. Within the above-named period the writer read a paper, at a meeting in Philadelphia of the American Gynæcological Society, to show that the then frequent occurrence of vesico-vaginal fistulæ and like injuries were not due, as then believed, to the use of instruments but resulted from delay in delivery; and he showed that not a single case of hundreds, which had been treated in the Woman's Hospital, could be attributed to instrumental delivery. When in these cases ergot had been administered to terminate the labor the destruction of tissues had been greatly increased.

When the necessity for establishing a woman's hospital was being agitated, some forty-five years ago, the opponents held that while a special hospital might be needed for the cure of vesico-vaginal fistulæ, by the method then introduced by Dr. Sims, there was certainly no need of a hospital for the treatment of the diseases of women. I mention this circumstance to show the frequent occurrence of vesico-vaginal fistulæ at the period stated.

The immediate effect of the author's paper, on the cause of these injuries, was to revolutionize the practice of obstetrics throughout the world by the recognition of the necessity, as taught by the author, of speedy delivery after the head had reached the floor of the pelvis and ceased to recede after a pain and, from his showing, the use of ergot has also been abandoned for purposes of rapid delivery. As a consequence of this change of practice a special ward, which was always crowded, is no longer needed in the hospital for the care of fistula cases, and the writer now seldom has a case in his service. The change has moreover done away with an immense deal of manipulation of the cervix which used to be practiced at different stages with the supposed purpose of advancing the progress of labor, but which now we realize must have caused more or less laceration of the cervix in every instance and, with the frequent occurrence of sepsis, but few of these cases ever healed.

Since the writer's attention was first drawn to the subject of laceration of the cervix and since the adoption of his operation for its repair, now fully thirty-five years ago, he has taught, upon every occasion presenting, the importance of proper care after labor, so that, when laceration occurred, a large proportion might be perfectly restored with the needed care, but which if neglected would need afterward a special operation to repair the injury.

As the custom has now become a general one to employ every antiseptic precaution in obstetrical practice, when laceration of the cervix occurs the efforts of nature thus assisted is sufficient, in all but the worst cases, to fully repair a very large proportion of tears. The writer has also recognized the fact that within a few years past a comparatively smaller number of this lesion which need "Emmet's operation" for repairing the cervix are now seen in practice. The condition has become directly reversed with a few years past and now, with but few exceptions, amputation is the proper means to employ.

"Emmet's operation" fully filled its place under the then existing circumstances and still does so whenever indicated, but the author now offers, through the publication of this paper, an equally original operation for the relief of pathological laceration of the cervix as it is now met with.

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EDITORIAL.

ANÆSTHESIA IN HOSPITALS.

Great advance in knowledge has been made concerning the effects, immediate and remote, of chloroform and of ether narcosis, since Dr. Thomas Addis Emmet first called the attention of the profession to the serious influence of ether upon Bright's disease of the kidneys. This author not only recorded, many years ago, his observations in relation to the immediate increase of albumen and casts after ether but his experience also showed that this increase often occurred in cases where, even though kidney disease might be suspected, an ordinary urinary analysis just before narcosis gave only negative results. He thereupon urged previous stimulation of the kidneys, as was his practice, wherever Bright's disease was suspected; after which and before etherization urinary analysis would determine the fact.

This effect of ether upon the kidneys is now universally recognized and we know, furthermore, that nothing is less decisive, as to the extent and sometimes even the existence of nephritis, particu-

larly of the chronic interstitial variety, than a single qualitative urinary analysis. Many microscopic examinations and many tests extending over a considerable length of time are often necessary. Again, we know the serious effect upon the lungs, when any abnormality exists, of both ether and chloroform and the danger from the latter to even a weak heart has been recognized almost as long as the use of that anæsthetic itself. With the prevalence of puerperal eclampsia and its kidney sequelæ, the frequency of tuberculosis and the not uncommon difficulty of diagnosis in its early stages, the frequency of old pleuritic adhesions with or without chronic pleurisy and more or less effusion and, finally, with the prevalence of fatty heart in women about or after the menopause (a time of life at which gynæcological operations are very commonly necessary) narcosis with either drug becomes a subject of very great import to the patient and to the operator and upon its careful and practiced administration often depend not only the future health but even the life of the former.

And yet, in our public hospitals, the anæsthesia of all patients is almost universally handed over to the least experienced member of the house-staff, a man not only frequently without any previous training but in many cases one who handles the anæsthetic for the first time in his life. Utterly irresponsible from his lack of knowledge, he usually deluges the patient with the ether, feeling quite satisfied if he be able to keep the patient in profound narcosis throughout the operation. In many cases this satisfies also the operator, intent upon his work, unless he be called back to a sense of his duty by sudden and alarming dyspnœa or syncope on the patient's part. Then there is a cessation of the operation and all hands take a turn, led by the operator in person (while the anæsthetizer stands helplessly by), at the *resuscitation* of the patient. When this has been accomplished, as fortunately in most instances it may be, the operation is resumed and, with perhaps the remark that the junior does not know how to anæsthetize—a rather obvious conclusion—the incident is supposed to be closed. It frequently is not, however, and many a patient might justly attribute subsequent ill-health and an early death to the careless and ignorant administration of an anæsthetic.

So important a part of every operation and one with such far-reaching effect should, in our opinion, be delegated only to an ex-

perienced physician or, better still, to an expert. It is always so in private practice; why, then, should the lives of hospital patients be unnecessarily put in jeopardy by an entirely green and inexperienced hand? It is a pity that we must go abroad to find a criterion of the proper method of administering anæsthesia; but that is our case. In London there are physicians who are experts in this branch of practice, who devote their entire time to it and who, moreover, find that it pays them well. They go from hospital to hospital and from private operation to private operation, assuming the entire responsibility of the anæsthesia with a consequent amount of comfort to the operator and of immunity to the patient which so thorough an experience alone can produce. Although we cannot find a parallel to this wise division of labor in our own ranks in this country yet our friends and first cousins, the dentists, have set us for several years a most worthy example in this respect. They have their expert anæsthetizers and send all patients who are to be operated upon, under gas, to them.

We hope the profession will soon come to realize its responsibility in this matter of hospital practice and that with the demand a class of specialists in anæsthesia will arise to meet and fill it.

REVIEW.

TRANSACTIONS OF THE AMERICAN PÆDIATRIC SOCIETY FOR THE
YEAR 1896-97—EIGHTH SESSION.

Transactions of a prominent medical society always make an instructive and interesting volume.

The discussion that follows the reading of a paper places the reader in a very different position to that of the minister who delivers his discourse while the audience is given no opportunity to reply, and it also puts on record the opinions of the members. The result is to make the reader guarded in his statements and the audience attentive. While the various papers are published in the medical journals during the year the bound volume of Transactions enables one at a glance to note what has interested the members during the year and all that has been said upon the various subjects. The papers that appear to have attracted most attention at the last meeting of the American Pædiatric Society were: "The Report of the Society's Collective Investigation into the Use of Antitoxin in the Treatment of Diphtheria in Private Practice" and the papers by Drs. Caillé, Wentworth and Jennings upon "The Lumbar Puncture of the Subarachnoid Space." The discussion was lengthy and able.

The editor, Dr. Crandall, and the publishers are to be commended for the production of such an attractive volume.

X. Y. Z.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL
SOCIETY.

Stated Meeting, June 18, 1897.

The President, ADDISON H. FOSTER, M.D., in the Chair.

Appendicitis, with Foreign Bodies in the Appendix.

Dr. HENRY P. NEWMAN: I have here several small bird shot, and one large lead missile, dumb-bell shaped, which I found in the appendix of a patient operated upon a short time ago. The history of the case is this: The patient is a young man, twenty-six years of age, of good family, rather high liver, with no previous history of any trouble whatever. In fact, the evening before he was taken sick, he was riding his bicycle, and had ridden it daily during the week. Sunday morning he got up, went to the closet, then to his room and complained of pain in the region of the appendix. A physician was called and found that the patient had a temperature of 101° , a pulse of 108, tenderness of the abdomen with gaseous distension, and some vomiting occurred during the day. I was called in the afternoon and saw the patient between four and five. A diagnosis of appendicitis was made. By palpation through the rectum and abdomen we could map out an abscess. The patient was removed to my private sanitarium, three blocks away, and operated on at six o'clock. On opening the abdomen and making quite a deep dissection, I came upon an abscess of the appendix, which contained sero-purulent matter. The abscess was opened and the cavity drained, after which the patient did fairly well for four or five days, though drainage was unsatisfactory, and on Friday exploring the wound with my finger I came upon these small concretions. With a spoon curette I succeeded in getting out twenty of these small bird shot, and this large dumb-bell shaped bullet. It is now five weeks since the operation and the patient has gone on to complete recovery, the wound being now closed.

Some eminent surgeons have taken the position that foreign bodies such as seeds, etc., are rarely found in the appendix and never

as causative factors in appendicitis. This case would seem to show that they may play an important part in the ætiology of the affection.

DISCUSSION.

Dr. BINKLEY: You say you did not remove the appendix at the first operation?

Dr. NEWMAN: No, I simply opened the abscess and drained the cavity.

THE PRESIDENT: I did not observe that you spoke of the habits of the individual, which is an interesting point.

Dr. NEWMAN: He is a young man of good habits who lives well, and I believe birds were eaten by the family quite frequently. The patient was also in the habit of making periodical trips to Wisconsin, hunting and camping out, shooting birds, etc. It is possible that with the ravenous appetite developed by this vigorous occupation and outdoor life in eating game he paid too little attention to what he ate, and may have taken into his stomach bird shot at that time. This is a possible explanation of the manner in which the large number of these bits of lead found their way into the system.

Dr. JOHN A. LYONS: I see no reason why bird shot should not be found in the appendix of a person who frequently eats birds and ducks. I have myself frequently found bird shot in food of that kind. I would like to mention in this connection a case of appendicitis that came under my observation in a bicyclist who had ridden on a Sunday some fifty-six miles in a little over five hours. There was no one called to see him until the following Thursday, although a severe attack of appendicitis had developed, followed by a general peritonitis. The case was so far gone when I was called that I hesitated to operate; I therefore called in Dr. Ferguson, who operated on him, but the patient died. The excessive riding in this case I have no doubt brought on the peritonitis. As near as I could learn from the history given, the patient had been subject to recurrent attacks of appendicitis, hence I would recommend any one who has suffered from an attack of this disease to avoid not only bird shot but also over-indulgence in bicycle riding.

Uterus and Annexa: Ruptured Tubal Pregnancy.

Dr. LESTER E. FRANKENTHAL: The first specimen was sent to me, with the special request of the physician that I am not to men-

tion his name, inasmuch as he does not wish the relatives to know that the uterus and annexa are in his possession. He was called in about four or five minutes previous to the death of the patient and obtained this specimen on post-mortem, having made a diagnosis of internal hæmorrhage. The patient was twenty-eight years old, had been married two years, but had never been pregnant. Three or four months previous to this date, June 1, the external os was dilated for the purpose of making impregnation more likely. Her menses had ceased for two months, when, on the 1st of June, about nine o'clock in the morning, she was seized with violent abdominal pains. At eleven she sent for a physician. At one o'clock the one who gave me the specimen was called; five minutes later the patient was dead.

The specimen is a very beautiful one, for various reasons. The abdomen was filled with clots reaching up to the diaphragm, though no elevation of the bed had been made. The points of particular interest in the specimen and history are: 1. In the centre of one large clot this body was found encysted, the membranes intact still containing the foetus. 2. She had never had a hæmorrhage. 3. She had never passed a decidua. 4. On opening the uterus we find the cervical plug still intact, and (5) the decidua can be most beautifully demonstrated *in situ*. 6. The tube on the left side is the one that ruptured, the rupture being on the posterior superior border of the tube, midway between its uterine and fimbriated extremity. 7. A corpus luteum is contained in the ovum of the same side. 8. Upon careful inspection there is a tendency, you will notice, on the part of the tube to twist (spirals). 9. The whole specimen shows the exsanguinated condition of the patient. 10. The hypertrophy of the uterus is likewise an interesting feature. 11. It is said the nearer the uterus the rupture of the tube, the more severe the hæmorrhage; this rupture is midway and still it caused the patient's death. 12. This case demonstrates the oft-disputed possibility of death from hæmorrhage and shock in extra-uterine pregnancy.

Specimens of Extra-uterine Pregnancy.

The next specimen is one of extra-uterine pregnancy, this being a tube with the cystic ovary. I happened to have three extra-uterine pregnancies in quick succession, all of them of three extra-uterine pregnancies in quick succession, all of them of

the right side, and all complicated by a cystic ovary. Possibly the cystic condition may be utilized in considering the ætiology of extra-uterine pregnancy, and possibly they were all of mechanical origin (the pregnancy).

Here is the other specimen which likewise contains a cystic ovary, and which was removed before rupture.

In a paper read before this Society about a year ago I stated that I believed it was wiser not to go in through the vagina where the pregnancy was far advanced, and where there was a possibility of previous rupture; but where the Fallopian tube was still pedunculated, and where therefore we could remove it in toto, I advised entering through the vagina.

I made a diagnosis of extra-uterine pregnancy about eight weeks ago during my service at St. Luke's Hospital, but for some reason or other I permitted myself to be persuaded that the case might be one of pelvic abscess on account of high temperature (anæmic and absorbent); consequently I went in from below, and the bright red hæmorrhage which I encountered made me feel exceedingly uncomfortable; so much so that several hours after the operation I tamponed as thoroughly as I could from below, thinking it might be necessary at any time after the operation to go in from above to check the hæmorrhage.

The other specimens are likewise of extra-uterine pregnancy. This one contains a cystic ovary. Here is another extra-uterine, and here another. I have had six cases of extra-uterine pregnancy since reading my paper.

I have here a fœtus which I brought along simply on account of the female genitals. This specimen demonstrates very nicely the spirals described by Freund, and especially is this to be seen on the left side.

This specimen is of interest because of the patient's history. I think she menstruated the last time in April, 1896. She did not menstruate in May, June or July. She spotted (?) in August. I put her to bed, thinking I could save the pregnancy, and there she remained four weeks. She again spotted (?) sometime in the following month, and on the 13th of December I was called because she was in actual labor and expelled this decidua. The decidua therefore was retained at least five or six months after the primary interruption of pregnancy, and I suppose that occurred some time during the

month of August. The patient was examined by Dr. Roler in September, and he agreed that the secundines were still retained; inasmuch as the patient neither suffered from the effects of hæmorrhage nor had any elevated temperature, she was permitted to get up and get about until she went into labor in December.

The next specimen is a uterus removed per vaginam on account of excessive hæmorrhage. It is beautiful because almost every possible variety of fibroma can be demonstrated on it, pedunculated, subserous and mucous, intramural, etc., etc.

DISCUSSION.

Dr. HENRY P. NEWMAN: Before the meeting was called to order I noticed the first specimen that was exhibited by Dr. Frankenthal, and it is a beautiful illustration of the progressive enlargement of the uterus in extra-uterine pregnancy, inasmuch as otherwise a normal condition of affairs exists, there being no salpingitis. The extremities of the tubes are still intact, and there is no closure of the fimbriated ends. The uterus corresponds to a three months' uterine pregnancy. Nothing could better illustrate the action of the normal uterus in cases of extra-uterine gestation, and it also explains one difficulty of making a differential diagnosis in the early months, the size and contour of the uterus being the same in intra-uterine and extra-uterine pregnancy up to the second or third month. The other specimens are also of interest.

Dr. C. S. BACON: In connection with the vaginal operation we frequently hear the assertion made that packing was resorted to to prevent hæmorrhage, and yet that is not very satisfactory. Now, in the case of extra-uterine pregnancy reported by Dr. Frankenthal, where the incision was made into the vagina, I would like to ask him if it would have been possible, by means of successive ligatures or sutures applied to the uterus, to draw down the annexa so as to apply clamps or ligatures directly to the bleeding vessels.

Dr. FRANKENTHAL: The hæmatocele reached up as far as the umbilicus before the operation and, after emptying the hæmatocele, of its clots the hæmorrhage was so extensive I feared that pregnancy had possibly advanced more than I thought when I started to operate, and that there might be a partially adherent placenta retained, from which the hæmorrhage came, and, in reference to ligating off

the annexa, inasmuch as I did not know which side it came from, I tamponed and watched the patient in the hospital, then came back a few hours afterward to see whether I had checked all hæmorrhage. If I had not done so, considering the size of the hæmatocele, I should have preferred to open the abdomen secondarily and to have checked hæmorrhage that way. I was delinquent in one thing in this operation. It would have been an easy matter to have introduced an aspirating syringe previous to making the incision and, having found blood, to have changed my tactics and to have gone in from above.

Dr. T. J. WATKINS: The case of death by hæmorrhage from primary tubal rupture is interesting, in that it at least shows that there is danger in these cases of death. At the American Gynæcological Society last year a number of prominent surgeons made the statement that they had never known of death occurring by hæmorrhage from primary tubal rupture, notwithstanding the fact that a city physician of Philadelphia reported a large number of cases that he found on autopsy where death was due to this cause.

Relative to the incision of hæmatomas due to extra-uterine pregnancy, it does not seem to me to be of any special importance if a vaginal incision is made in cases that should be operated by the abdomen for, after the blood is removed, if there are indications for an abdominal section the abdomen can be immediately opened. The removal of blood by the vagina would facilitate rather than complicate the abdominal operation. I, therefore, do not believe that it was a mistake for Dr. Frankenthal to operate upon the case mentioned by vaginal incision.

Dr. JOHN T. BINKLEY, JR.: If I understood Dr. Frankenthal correctly, he spoke of the mechanical influence of large cystic ovaries in producing tubal pregnancy. I would like to have him state in what way.

Dr. FRANKENTHAL: Either by direct pressure or by the inflammatory condition which the cystic ovary produces.

Dr. ALBERT GOLDSPOHN: I have not much sympathy with attacking a case of extra-uterine pregnancy with such extensive extravasation, as in the first case described, through the vagina. There is not very much reason in such a procedure. Extra-uterine pregnancy is usually a sterile affair, and we can deal with it through an abdominal incision, and frequently can close the abdominal wound

without drainage. This is one reason why it is but slightly objectionable to treat it as an ordinary laparotomy, and the large extravasation certainly suggests the possibility of the operator not being able to do everything that may be indicated.

A Case of Eclampsia.

Dr. FRANKENTHAL: I should like briefly to report a case of eclampsia, the previous history of which was this: The patient had convulsions during the time of detention; at three years of age whooping cough; soon after that there developed a left femoral hernia; she wore a truss up to the seventeenth year, then the hernia was spontaneously cured. She had measles at five; a little later chicken-pox; at ten she had typhoid fever, and at thirteen pleurisy, confining her to bed for one month. She was afflicted with these diseases up to the seventeenth year, when she had a genuine attack of malaria. From then on, until the twenty-eighth year, she was occupied with work at the Hull House, and while there was taken down with diphtheria. She menstruated at sixteen regularly. Her family history is good. She was in the habit of rising once during the night for the purpose of urinating during the last four years. She complains of no headaches, no eye symptoms. The condition of the kidneys was not known previous to pregnancy. She is the wife of a physician. She was married in November and became pregnant about the middle of December. On the 10th of May there was noticed œdema of the lower extremities; the urine was examined and contained a cloud of albumen; quantity of urea was normal; casts were absent. About the twenty-first of May the œdema of the lower extremities had disappeared. There was considerable pain at this time in the back, slight nausea, no headache, no pain in the pit of stomach. On the evening of May 26, about eight o'clock, there was extreme œdema of the face and upper extremities, so that the doctor again examined the urine, and found albumen by the heat and acetic acid test. The albumen came down in such density that he could invert the tube; it was solid. At two A. M. of the same night the first convulsion occurred. Chloroform was at once given, and during the night two hypodermics of pilocarpine were given, and the patient was seen at five o'clock the next morning by Dr. W. A. Phillips. Between four and five she became unconscious, and

was in this condition when I saw her at about eleven. She was cyanotic, bleeding from the mouth where she had bitten her tongue; had had twelve convulsions up to eleven, the last ones coming every thirty minutes. There was slight œdema of both lungs. With the assistance of the husband and Dr. W. A. Phillips, as well as two nurses, the patient was anæsthetized, the pubes shaved, and I proceeded to dilate the os. I tried to dilate it first with a Goodell's dilator, then I used Barnes' dilators, but was unsuccessful. Dilatation of the os was next to impossible. Barnes' bag was used, but I broke two of them. The patient's condition was growing alarming, so I made two Dührssen incisions and dilated the rest of the lower uterine segment gradually and slowly with Barnes' bag, made version, extracted the foetus, and expressed the placenta. The foetus lived about an hour; in other words, after I was through with the operation the foetus was still breathing, but expired shortly thereafter. Its age was five and a half to six months. I immediately sewed up the incisions, although I believe this is not recommended. At any rate, the only literature I remember in this country is by Dr. Clifton Edgar, of New York, and I believe he does not sew up the cervix. The patient made an uneventful recovery. She was given veratrum, after the operation; was put in between blankets and given hot air baths. Veratrum was given in twenty-minim doses, hypodermically, repeated in an hour. The pulse dropped very considerably. At first it was 130 or 140 at eleven or twelve o'clock at noon, and by the evening the pulse was between 70 and 80. There was profuse sweating. The albumen is decreasing in the urine, but still a few casts can be found. It is about nineteen days since the patient was delivered.

DISCUSSION.

Dr. C. S. BACON: The treatment of eclampsia is a subject upon which there is very little agreement among obstetricians, and probably there will not be until the nature of eclampsia is better understood. I suppose this case is given as proof that the immediate emptying of the uterus was the right procedure, because the outcome was good. Such a conclusion would not be justified. The question of rapid delivery is still a very important one, and not yet decided. Inasmuch as one-fourth of all cases of eclampsia occur

after labor, and so long as the attacks do not cease after delivery in from thirty to forty per cent. of all cases intra-partum, it is somewhat doubtful whether the immediate emptying of the uterus is so urgently indicated, or is a measure to be advised. It is true that the results of Professor Zweifel in Leipsic have been quite favorable toward emptying the uterus. He finds that the mortality has decreased one-half during the last four or five years since he has resorted to the method of rapid delivery. On the other hand, the results of Professor Chrobak in Vienna seem to contra-indicate rapid delivery in cases of eclampsia. It is a question in Dr. Frankenthal's case whether the good result was due to the rapid emptying of the uterus, which is certainly a dangerous procedure in many cases, or to the after-treatment, the rapid elimination by means of the skin and of the kidneys, and the medicinal treatment instituted. I would call attention in this connection to one medicinal measure which I believe is important, and that is the hypodermic injection of salt solution in the treatment of eclampsia. It has not only given good results in the cases in which it has been used, but it also seems, theoretically, to be a valuable means. It acts chiefly as an eliminant, as it certainly is, and also by diluting the poison which we have reason to believe, from the observations and experiments that have been made with blood serum, exists in the blood of eclamptics, although this point is not absolutely proven. It seems probable that the toxicity of the blood serum of eclamptics is very considerably increased, and if any means of diluting the blood serum, as well as eliminating the toxic element, is indicated, the use of salt solution by hypodermic injection is one of the most valuable means to employ. That, if taken in conjunction with venesection, hot baths, and with sufficient morphine hypodermically to control the spasms, is as a rule, a safer procedure than the rapid emptying of the uterus.

Dr. FRANK CARY: I have been very much interested in hearing the report of Dr. Frankenthal's case, and personally I have always favored rapid delivery, particularly in such a case of eclampsia as he speaks of, and I remember very distinctly in a case I had with Dr. Watkins of encountering the same difficulty that he did in regard to dilatation of the cervix. Barnes' bags and every other thing proved ineffectual in dilating the cervix in that case.

While I was in Vienna last year I was astonished to see the manner in which cases of eclampsia were treated in Schauta's and

Chrobak's clinics, where every case of eclampsia that I saw was left, so to speak, to itself. They did not resort to rapid or forcible delivery in any case that I saw there, but simply gave attention to rapid elimination by the skin and kidneys, and I believe the use of salt solution. It is rather hard in these cases to stand by and do nothing, and yet the question of interference is an open one. I am not prepared to lay down any rule for guidance in these cases, but I should be governed largely by the individual case. It is nevertheless a fact that those cases in which rapid delivery is resorted to are among the most successful. Personally, in a case similar to Dr. Frankenthal's, I should follow the same method that he did.

Dr. ALEX. H. FERGUSON: As Dr. Bacon has just mentioned subcutaneous injections of saline solution in cases of eclampsia, I might draw the attention of the Society to the experiments and practical work of Barrè of Paris. He not merely makes transfusion of salt solution, but performs venesection at the same time. This is done to lessen the toxins in the blood, in septic conditions, in uræmic convulsions, in scarlatina, etc. He holds that in the elimination of poisons from the system by the kidneys, venesection stands second in importance. It is quite doubtful whether rapid evacuation of the uterus does the good *per se* in these cases, but that it is the amount of blood that is lost which does the good. As a means of eliminating poisons from the blood, venesection is important.

Dr. JOHN T. BINKLEY, JR.: I have had the misfortune to have three cases of eclampsia this year in consultation. One was with Dr. Massey, a block or so from my hospital, in which the convulsions came on after labor. The treatment consisted of the hypodermic injection of Norwood's tincture of veratrum, thirty minims, three injections being given in three hours, and half-grain doses of morphine.

Two or three months ago I was called to see another woman, by Dr. Eastlake. She had been delivered early in the morning. She had a convulsion immediately after the delivery of the child, and just as I entered she began to have another. She was a full-blooded, stout working woman, and Dr. Eastlake began at once to administer chloroform. I opened a vein in her arm, drew off a glassful of blood, and as quickly as possible gave a hypodermic injection of veratrum, thirty drops. Both of these patients recovered. I was led to do this because of the teaching I received from Dr. Reamy,

of Cincinnati, who was connected with the college in which I attended lectures. A year ago last May I attended the meeting of the American Gynecological Society, and the consensus of opinion was in favor of tincture of veratrum viride and morphine in these cases. Dr. Reamy has a very large obstetric practice, as has Dr. Mitchell, his son-in-law. He reported very carefully a great number of cases of eclampsia to the Society, and the general opinion was that veratrum should be administered in these cases. The men who favored its administration were men of large experience, and careful thinkers. Dr. Reamy laid great stress upon the subsequent use of large doses of morphine hypodermically.

A third case which I saw terminated unfortunately about sixty days ago. Dr. E. C. Williams called me about five o'clock in the morning. In this case the family was exceedingly solicitous, as a friend had died of eclampsia; this, together with the fact that the most cordial social relations existed between the family of the patient and the attending doctor, made the doctor doubly cautious. Only a few days before the convulsion, he detected a trace of albumen in the urine. From this moment until convulsions occurred, he gave the case special consideration, and upon the appearance of the first convulsion, he called me in consultation. I responded promptly to the call with my surgical nurse and every necessary appliance for an immediate delivery of the patient. Almost immediately upon entering the house, the patient had a third convulsion. The vagina was exceedingly small, and it was necessary for me to dilate the vagina with Barnes' bags. Following the dilatation of the vagina, I used a steel dilator to make the primary dilatation of the cervical canal. This I followed with Barnes' bags, until I was enabled to slip the forceps over the head. During this entire process of dilatation, which probably consumed about thirty minutes, the patient was kept thoroughly anæsthetized. I made firm traction on the forceps for something like twenty or thirty minutes when a violent convulsion caused delivery, with extensive laceration of all the soft parts. It seemed to me as if the uterus had been torn from the vault of the vagina. Realizing the extensive repairs necessary, and care which would be required, I had the patient removed at once in the ambulance to the hospital which is but a few blocks away. After careful flushing and irrigation, the tears

were repaired. Almost immediately following the operation, the patient died in a convulsion.

If there is any gentleman here who was at the meeting of the American Gynæcological Society, he will remember the discussion on this subject, and the consensus of opinion was the free administration, thirty drops, and even one-dram doses, of tincture of veratrum, hypodermically, and repeated, followed with maximum doses of morphine, hypodermically.

Dr. LESTER E. FRANKENTHAL: I was not present at the meeting referred to of the American Gynæcological Society, but I distinctly remember their Transactions, in which it was stated that the administration of veratrum should be continued on following days, if necessary, four or five doses on subsequent days. Personally, I am afraid of morphine, for the reason that in several cases I have observed its effect upon the kidneys. In one patient, on whom I have used it repeatedly there is an absolute cessation of secretion for eighteen hours afterward. The patient of whom I spoke had eleven convulsions at the time she was seen by me; there was beginning œdema of both lungs; she was unconscious; the albumen test was solid. I do not believe that I would hesitate to rapidly deliver in these cases in view of the possibility of lacerating the soft parts. We are liable to have tears, but we are prepared to repair at once any damage that is done. On the other hand, excluding that, I cannot possibly see any dangers whatever. We proceed aseptically and antiseptically to prepare the patient just as we would for a vaginal hysterectomy, and I see no more danger in performing rapid delivery in eclampsia than in the other conditions. Had I seen this patient early I perhaps would not have delivered at once. I should have done as they do in Vienna, put her between blankets and turn on a hot air bath, and give her salines per rectum and likewise under the breast, a treatment, by the way, which this patient received after delivery. She received 6-10 of 1 per cent. salt solution in either breast, and rectal injections of salt solution. I am sure every one who would have seen the desperate condition of this patient, would have agreed in resorting to rapid delivery. Considering that she had eleven convulsions, œdema of the lungs, was unconscious, cyanosed, etc., I think every one would have done the same thing. Dr. Bacon argues that from thirty to forty per cent. of the cases have return of convulsions after labor; this is too high, for Olshausen, in

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a collection of two hundred cases, shows no return of convulsions in eighty-five per cent.; not thirty to forty per cent., as Dr. Bacon states, but fifteen per cent. Likewise does Olshausen state that he has never seen a patient recover after the fifteenth convulsion.

I likewise agree with Dr. Ferguson that the hæmorrhage during delivery is of great use, inasmuch as in plethoric patients it saves venesection.

Exhibition of Unique Microscopic Sections of Papilloma and Carcinoma of the Tubes, with a Review of Cases Treated by Me at St. Luke's Hospital During One Year.

BY T. J. WATKINS, M.D.

* (See page 272.)

Exhibition of Specimens.

Dr. EMIL RIES: The first specimen I show you is a left tubal cornu from a case of adeno-carcinoma of the tubes, where there is a combination of two neoplasms, adeno-myoma and adeno-carcinoma. Under low power you will see the tubules of the adeno-myoma, as well as the carcinomatous particles.

In the field toward me you will see carcinomatous masses, and in the other direction masses of the adeno-myoma. I have here a part of the tube which shows adeno-carcinoma with a deviation of the tube, and it shows you the difference of the carcinomatous structure in the cavity of the tube and under the peritonæum. Under the peritonæum there are solid masses of carcinoma, and in the cavity you have a papillomatous condition.

I have here a specimen from a case of carcinoma of the tubes, and you will see the papillomatous structure of the neoplasm in the cavity of the tube. This is a perfectly unique specimen, because in the six cases of the literature of the subject there is not one with adeno-myoma, and here is a complication of adeno-myoma and carcinoma. The importance of adeno-myomas in the formation of malignant neoplasm in one case, and malignant papilloma in the other is great. I do not think adeno-myoma has anything to do with the formation of papilloma or papillo-carcinoma. Adeno-myomas of the tube are frequent tumors; they are by no means rare, although

the time is comparatively short since they were known. I find that adeno-myomas occur in almost twenty per cent. of all cases of tumors.

I have here one section of a tube showing thickening of the tube in consequence of adeno-myoma with papillo-carcinoma. In looking at this with the microscope you can see the cavities of the adeno-myoma in dark or blue lines, while the carcinoma shows dark or blue masses.

As to the plastic work on the tubes which Dr. Watkins did, in some recent examinations of tubes on which operations have been performed, they give some unexpected vistas into the future of tubal plastic work. It seems to be unnecessary to try to preserve as much as possible of the tube. A little stump of the tube is all that is necessary to preserve. The little stumps of the tubes, even where they have been ligated, remain open; they do not close up, leading in many cases to the formation of some exudate. In other cases particles of ovaries have been left and led to the formation of pregnancy in the uterus, where pregnancy was supposed not possible to occur, because the tubes and ovaries were said to have been removed. There are three cases on record in this country where pregnancy occurred after the removal of both tubes.

I have three cases of tubal stumps which have remained open after removal of the appendages. They are perfectly permeable from the cavity to the peritonæal end. I have published some of the cases in the *Archiv. für Gynäkologie* and cases of papillo-carcinoma were published in the journal of the American Medical Association, May 22, 1897. The drawings I have made from this paper published in the journal will show the condition of the tubes better than the few microscopic specimens which I can show you to-night.

DISCUSSION.

Dr. LESTER E. FRANKENTHAL: I am glad that an opportunity offers itself for me to publicly congratulate Dr. Watkins upon his excellent work during the last year. He is to be congratulated (1) upon his good fortune in meeting so varied pathological conditions of the female genitalia, and in two particular instances the cases are unique; (2) he is to be congratulated also upon his conservative methods. His igni-puncture of small cystic ovaries is a conserva-

tive way of treating the tube, excision of the tumor in the middle of the tube, and sparing the remainder of it; (3) he is to be congratulated upon his most excellent results.

The case of general puerperal peritonitis was referred to him by me, and I asked Dr. Watkins to operate on the woman. She was in a moribund condition when admitted to the St. Luke's Hospital, so that it is hardly fair that this case should be included in his mortality list. His mortality summary is about one and three-quarters per cent. This is a record unsurpassed by the gynecologists in our country.

On account of the late hour, I believe I had better not discuss in detail the methods employed in the various conditions spoken of, in the paper; but I would like to recommend to the members to try ovarian extract, after removal of the ovaries, and likewise in treating the symptoms of the natural climacterium. I have had excellent results with it. The patients do not complain as severely as they do otherwise, and in only one instance did I get an erythema following the administration of it. I have used Armour & Co's. ovarian extract.

I should likewise urge the use of formalin catgut for intra-abdominal ligatures. Our results have been excellent with it. It is tougher than any catgut I have ever used. Through the painstaking efforts of our assistant superintendent of the Michael Reese Hospital Training School—Miss Tooker—we have a superior catgut. This is her method:

1. Roll tightly, single layer on one-half-inch glass rod.
2. Immerse for forty-eight hours in two per cent. or for twenty-four hours in forty per cent. solution formalin.
3. Wash for an hour, changing water frequently (3-4x).
4. Immerse in sterilized water for twenty-four hours.
5. Boil for thirty minutes.
6. Preserve in sterilized alcohol, containing two per cent. solution iodoform.
7. This catgut will not stand a repetition of the boiling; it seems to grow brittle.

Dr. WM. H. RUMPF: I desire to add a few words of congratulation to those already spoken regarding the excellent paper of Dr. Watkins. I have enjoyed it very much. I am sorry that we do not have more résumés of work done in this manner. The only way

nowadays by which we can learn is to compare our work. We can learn a good deal from these practical results.

We are also indebted to Dr. Ries for this pathological demonstration. This is another point that we are very lax on. Our cases are not utilized; we do lots of operating, and the specimens are put in alcohol and left there. If we examined our specimens more closely we would be able to adopt better methods of treatment and do more scientific work.

The paper of Dr. Watkins covers so much of the whole field of gynecology that one might spend hours in discussing it.

Dr. ALEX. H. FERGUSON: I wish to congratulate Dr. Watkins on his excellent paper and his good results. These results are equal to any obtained in any place, I believe. The paper covered so much ground and so many subjects, that it is practically out of question to discuss it this evening. While he was reading it there was one point that struck me, with regard to the case of vaginal section for a double suppurating ovarian tumor that died from sepsis, and a little later on he remarked that he did not flush the abdomen in a single instance. It occurred to me that flushing of the abdomen in those cases is a good thing and sometimes prevents rapid absorption of septic material after the operation, and obviates subsequent bad results. We know that in appendicitis, and the same holds true with salpingitis. We have been told by some surgeons simply to do nothing but open, mop out and drain. Before that we had a period of flushing. I have tried both very thoroughly. I think I will be able to prove that in all of those cases in which there is sepsis and where the septic matter is more or less circumscribed, as in the pelvis or in chronic cases of appendicitis, we have better results by thorough flushing at the time of operation.

Dr. HENRY P. NEWMAN: I also feel grateful to Dr. Watkins for presenting the results and details of this large amount of work. As has been stated, the work is so extensive and covers such a large field, that it is impossible to discuss it.

Dr. JOHN A. LYONS: I congratulate Dr. Watkins on his wonderful success and painstaking, careful work. I have listened with interest to his report.

Dr. WATKINS (closing the discussion): Dr. Ferguson's criticism relative to irrigation may be a good one in some instances. The case of double suppurating ovarian tumor that died might have re-

sulted differently if I had washed out the pelvis thoroughly instead of trusting to dry mopping and drainage.

Mental Disturbances following Plastic Operations, with Report of Cases.

BY JOHN A. LYONS, M.D.

(See page 335.)

DISCUSSION.

Dr. HENRY P. NEWMAN: The subject of this paper is one that I have always felt very much interested in, and some of you will remember that I presented to the Society some years ago a paper on an allied subject. While recognizing sepsis as a causative factor in nervous and mental disturbances following operation, we should not belittle the importance in this regard of the direct mental effect and relative shock of all surgical procedure—in greater or less degree depending on the length of the operation, the quantity or duration of the anæsthetic, the amount of hæmorrhage, the extent of trauma, and not a little on the nervous susceptibility of the patient. While I regard shock as largely physical, the mental condition plays an important part. In the case of a nervous, high-strung woman, easily excited, unable to bear pain, with a great and increasing dread of anæsthesia and of operation, is it any wonder that she should be affected and should lose control of her will power, and that an explosion should take place following operation or recovery from the anæsthesia. Some writers lay great stress upon the predisposing causes, such as heredity, the state of the patient prior to or at the operation, the condition of alcoholism, contagious disease, etc. An important element which we overlook in our patients is the influence of dread and disturbed nutrition, which may come from it, as well as the prior condition of the patient, in the results of our operative procedure. I think we can do a good deal of creditable work along the line of prophylaxis in this class of cases. We should carefully guard against sepsis; not give too large a quantity of the anæsthetic and prolong the operation. The operation should be done as rapidly and as expeditiously as possible. Then, too, the

maintaining of bodily heat at the operation and subsequently is extremely important in preventing some of these untoward results.

Dr. BINKLEY: I would like to ask Dr. Lyons if he stated that two drachms each of bromide and chloral were given in the case referred to.

Dr. LYONS: As near as I can judge, that amount was given.

Dr. NEWMAN: I would suggest the use of bromides as a preventive, also the use of alcoholic stimulants.

The PRESIDENT: I have seen a similar effect upon the os, as has been described by the essayist, with restoration of the uterus, where there had been undue nervous symptoms, etc.

Dr. J. T. BINKLEY, JR.: It is hardly possible that sepsis was a factor in these cases. Dr. Dodds has also reported a good result in one of these cases at the end of eight days. He removed the silkworm gut sutures, and it is hardly probable that any sepsis entered into the cause of the insanity in his case. I have never seen any such reflex symptoms follow this class of work done by myself, or in the observation of the work of other men. Situated as I am, for the last seven years I have seen a goodly number of cases, but I have never seen any case of insanity following such surgical procedure. There is no doubt that every patient who comes to us for operation, whether man or woman, prepares himself for this ordeal with a great deal of mental worry, and the relaxation following it is undoubtedly a prominent factor in the causation of the mania in these two cases.

Dr. ALBERT GOLDSPOHN: I agree with Dr. Newman that the psychological element should certainly not be forgotten, but I believe it is the opinion of specialists in mental diseases that most of these cases are due to sepsis or to intoxication with some drug or drugs. I have only had one case of mental disturbance following a comparatively minor operation. The woman became acutely maniacal and required restraint. She recovered, however, after fully half a year. The operation was amputation of the cervix with restoration of the pelvic floor. The case was free from any suspicion of sepsis. I have a suspicion that the small amount of iodoform used may have played some rôle in the causation of the mental disturbance. It was not due to the urine. But I have seen iodoform poisoning undoubtedly when it was not found in the urine by ordinary tests.

As to the rôle of major gynecological disease, when the uterus and appendages are involved, there the field is very great for mental disturbances following surgical interference. I think the gynecologist would be a very useful man in charge of females in insane asylums. During the last nine months I have had two cases that I recall to mind that are somewhat interesting. One was a woman with chronic metritis with a badly torn cervix and pelvic floor, enlarged cystic ovary on one side with a thickened tube and ovary less diseased on the other, who was advised to be operated by her physician several years ago, but she yielded to her natural dread of all operations until at this time. Then she became mentally deranged to the degree of having fixed delusions, and was very badly troubled with insomnia. She frightened every one of her relatives, and at that time they were opposed to any operation that was advised. It seemed to me, from the prospects in the case, it would be better if menstruation were preserved, and therefore I pursued the conservative plan. I resorted to a vigorous curettement, followed by liquid caustic and amputation of the cervix, with the removal of the ovary and tube on one side, and resection of the ovary on the other side, which was destroying the cystic follicles, and finally repair of the pelvic floor. The immediate results were exceedingly satisfactory. Convalescence was smooth, but after she had returned home about three months she would have slight mental disturbance at the time of menstruation, and I felt now that it would have been better probably to have removed the uterus and other organs so as to do away with menstruation.

Another patient had chronic metritis, a torn cervix, marked retroversion, torn perinæum and diseased appendages, cystic ovary on one side, and less so on the other. This patient was the mother of several children. She had become so disturbed mentally that she could not sleep without a reasonable amount of hypnotics. She would rave at night, had fixed delusions that certain parties were in league against her, and this form of the delusions was a perplexing thing to me in deciding what to do. I decided, however, to proceed radically, yet retain menstruation, if possible. A curettement was done, the cervix prepared, and the appendages, tube and ovary on one side removed, resection on the other side, shortening of the round ligaments within the abdomen supplemented with ventral fixation, and

finally repair of the pelvic floor, leaving one ovary to functionate. That woman has recovered *in toto*.

Dr. JOHN A. LYONS: In reply to some of the statements that have been made, in neither of my cases was there sepsis, and I hardly think there was iodoform poisoning. Last evening I delivered a woman from whom I had removed a suppurating tube and ovary about two years ago, and within twenty-four hours she took about two drams and a half each of chloral and bromide, with but little effect if any in quieting her nervous symptoms, and in the other case reported two drams was given in six hours for after-prescribing. I had gone to sleep, and had slept about six hours, and when I awoke I was, like Dr. Binkley, very much alarmed. I examined the patient immediately, saw that she was sleeping nicely, and found the os closed. I was satisfied to let her continue in this way.

Dr. HENRY P. NEWMAN: May I add a word in regard to this matter of sepsis? While I believe in it, I would call attention to the fact that many of these cases of insanity follow minor procedures. The object of my previous remarks was to draw attention to minor conditions outside of sepsis, and I would refer to a tabulation of eight cases of insanity reported by Dr. Noble following perinæorrhaphy. We can hardly assume that eight cases of insanity would follow perinæorrhaphy in the practice of so good an operator as Dr. Noble, of Philadelphia, without other cause than sepsis.

Dr. ALEX. H. FERGUSON: I was called in consultation in a case where perinæorrhaphy had been done, and the woman developed acute mania and died. The fact of it being a perinæorrhaphy strengthens the theory of septic infection because we have two septic tracts which can only be rendered comparatively clean, and in the repair which takes place there is a certain amount of sepsis. An anatomical fact strengthens the idea of direct sepsis; that is, the hæmorrhoidal and associated veins are so situated that the poison would find more direct entrance into the venous system and then to the distant organs of the body, such as the brain, meninges, etc., than when a minor operation is performed; for instance on the extremities.

Dr. C. S. BACON: In my examination of the mortality records of Chicago in cases of puerperal infection, I found some astonishing facts, namely, that the number of deaths attributed to puerperal insanity was quite large, in one year amounting to ten deaths.

Further consideration of the subject has led me to believe that those deaths which were attributed to puerperal insanity were largely of septic origin. This has a bearing on the subject under discussion, because the tract of infection is the same.

Dr. ROBERT DODDS: It seems to me, there is a point involved in the subject under discussion that has not been touched, namely, the influence of the sphincters. In the repair of the perinæum the vaginal sphincter is involved and that of the uterus in the cervix. In view of the numerous reflex symptoms that appear where a sphincter is involved it seems to me it would be well to attribute part of the mental or whole troubles reported in these cases to this source.

I have to report one case of acute mania arising from perinæal section. There was, however, infection in the case.

The PRESIDENT: The remarks of Dr. Ferguson lead me to review the cases of mania that have come under my observation in connection with the puerperium. I find that puerperal mania has occurred more frequently in those women in which there were deep lacerations of the perinæum than in the more simple cases. As far as my experience goes, I have not seen all severe lacerations followed by mania. However, whenever we have severe lacerations involving the two passages we ought to look out for puerperal mania.

Dr. LYONS (closing the discussion): I can show by the records that there was absolutely no sepsis in either one of these cases, for such would have been indicated by the thermometer and pulse, particularly by the pulse. However, my friend Dr. Ferguson might possibly have discovered some that I could not find. The case in which a perinæorrhaphy was done was very annoying to me, because of the mental disturbances; yet, as far as the result of the operation was concerned, it could not be better. In fact, I have never had better results than in the case I have reported to-night. I do not believe that either of the operations, so far as union is concerned, could have been improved upon. Therefore, I cannot possibly see how they could be held responsible for the mania.

Official Transactions.

T. J. WATKINS, *Editor of Society.*

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, April 20, 1897.

The President, R. A. MURRAY, M.D., in the Chair.

Cysts of the Ovary.

Dr. J. RIDDLE GOFFE said: I was suddenly called recently by a patient whom I had never seen. She had a temperature of $103\frac{1}{2}^{\circ}$, and complained of pain across the lower part of the abdomen, from which she had been suffering for nearly a week. A large poultice covered the abdomen. She was greatly agitated, and said she felt very ill. Upon examination, I found there was a fluctuating tumor presenting in the vagina posterior to the cervix on the left side, the uterus being crowded against the symphysis. The pelvic organs were all bound together in an irregular mass and immovably fixed. I immediately transferred her to my sanitarium and, under an anæsthetic, I made a free opening through the vagina at the point of fluctuation. There escaped fully a pint, or even more, of a grayish, turbid fluid, but it did not contain pus. Passing my finger through this opening, I found a large cavity with rigid walls on all sides and a roof, and in this there was a pendant membrane which I took to be the sac of a collapsed ovarian cyst. After thorough irrigation with salt and bichloride solutions, the cavity was packed with gauze and the patient returned to bed. All idea of radical work at this time was abandoned on account of the high temperature of the patient. The abnormal temperature fell rapidly and in forty-eight hours had entirely disappeared.

The patient's appetite and strength returned promptly, and on the seventh day she was subjected to a laparotomy. The intestines, omentum, the uterus, broad ligaments and appendages were bound together in a confused mass by a thick, plastic exudate. By careful work in breaking through the exudate and separating the adhesions the contour of the organs and their relations to each other were gradually revealed. The collapsed sac of the enlarged left ovary

was discovered as anticipated, and was doubtless the source of the fluid previously evacuated through the vagina. Before bursting it had evidently filled the entire cavity, which was defined by rigid walls, as previously described. The condition of the left side previous to the rupture of the sac was duplicated on the right side. After dissecting off the adhesions and exposing the walls of the cyst, it was tapped with a trocar, and the fluid removed. This fluid was of a grayish color and turbid, but free from odor. The appendages of both sides were removed, but the uterus was not interfered with. It had been curetted at the previous operation. Gauze was placed in the bottom of the pelvis, and carried through the opening into the vagina. Patient made a prompt and smooth recovery.

The woman had suffered from syphilis eight years previous to my seeing her, and bore the marks of its ravages in the curtailed and irregular outline of her nose.

A Large Abdominal Tumor.

Dr. W. T. LUSK: Here is a tumor that I removed from a patient a couple of weeks ago. It is a very large pedicled growth filling the abdominal cavity, and was nourished by very large vessels from the abdominal walls. A great tangle of veins, too, proceeding from the omentum, was attached to various portions of its surface. The separation of adhesions and the tying of vessels required much time. After the tumor had finally been removed, I had thought I would take out the ovaries to arrest the growth of the uterus, but this proved impossible because of the excessive vascularity of the uterus, which bled at the slightest touch, so I had to go ahead and remove the entire uterus likewise. The operation lasted two hours and twenty minutes, and was attended with a good deal of loss of blood. To my great satisfaction, however, she rallied well, and the next day was in good condition. She has since made an excellent recovery. I don't know whether it would seem elementary here, but I noticed an attempt on the part of the house staff to rally the patient after the operation by injections of nitro-glycerine and strychnine—indeed, I think 1-10 grain of strychnine had been given before I happened to notice the treatment. In place of the restoratives I suggested the propriety of pressing down the back of the tongue so as to enable the air to enter unobstructed into the trachea from

without. After this was tried for a few moments, the patient took a deep breath, and the immediate dangers were ended.

DISCUSSION.

Dr. H. N. VINEBERG asked whether there was any history of peritonitis in the course of the woman's history?

Dr. LUSK: She complained simply of the physical discomfort of a large tumor.

Dr. R. H. WYLIE: I have seen a number of cases where the blood supply was largely from the *omcintum*, and except that, the blood vessels are thin-walled and are easily torn. If, however, the blood supply comes from the *mesentery*, as in cases where the tumor lifts up the pelvic peritonæum, then great care must be exercised in enucleating and tying off blood vessels as the blood supply to the intestine itself may be jeopardized.

This large blood supply is one argument against the vaginal operation for large tumors.

Dr. LE ROY BROWN: We have for some time almost given up the use of strychnine and nitro-glycerine after operations in the service of Dr. Cleveland at the Woman's Hospital. We use very little, and depend almost entirely on hot water bags over the heart, so hot that they have to be watched and changed often. We use, in addition to that, a saline rectal injection with some whisky, if necessary. I have never seen a single case of weak heart after operation respond to strychnine and nitro-glycerine injection, and I have seen many with weak hearts come up rapidly with hot water bags placed over them. It gives the best results in our hands. We have ceased using the hypodermics of strychnine almost from the fear of it; I have never seen any active results follow, and there may have been serious results, possibly due to the excess of the strychnine and nitro-glycerine used.

Dr. A. BROTHERS: What doses do you give in cases of shock after operation?

Dr. BROWN: We use very little. Occasionally 1-20 or 1-30 after an operation, which is not repeated. Formerly—years ago—the custom was to use 1-20 or 1-30, repeated at frequent intervals. It is my opinion that some failures of patients to rally was due to this excessive stimulation. If strychnia is used now in Dr. Cleveland's service it is about 1-30 every four to six hours.

Dr. A. BROTHERS: I feel that in my practice the recovery of a number of patients after severe operative interference with resulting cardiac weakness was due in great measure to the judicious employment of hypodermic injections combined with intravenous or subcutaneous introduction of salt water. I do not think that this Society can sanction the entire abandonment of hypodermic medication in these cases. I appreciate that this method may be abused by house-surgeons suffering from more zeal than good judgment. But I think that the careful use of such stimulants as camphor, strychnine, nitro-glycerine and alcohol will continue to have their indications and prove serviceable in many a desperate case of post-operative collapse.

Dr. GOFFE: I think a great deal of harm is done by too prompt use of strychnine, digitalis and nitro-glycerine in cases of apparent collapse in operations, and I am led to believe that it is a great mistake to use them to the extent that now prevails in most hospitals.

Gynæcology at Bellevue Hospital.

By WM. T. LUSK, M.D.

(See page 261.)

Report of Operations opening the Peritonæal Cavity—Second Medical Division, Bellevue Hospital.

By WM. M. POLK, M.D.

(See page 267.)

DISCUSSION.

Dr. G. T. HARRISON: There is one point I would like to make a few comments upon. In the first place, I beg to say that I think the statistics are of the most gratifying character and reflect great credit upon the operators, the house staff and trained nurses, as it is insisted they should be mentioned. I think that, while I have great admiration for modesty—certainly it is an excellent virtue—that there is something still higher and nobler, and that is truth and jus-

tice. I think a man must be just to himself. Dr. Polk, in his modesty, refuses what surely belongs to him, and that is credit for his skill as an operator, and I think myself that that is the prime factor. You may have as good assistants as you choose, but they can never conduct the patient safely over the difficulties and dangers of an operation defectively performed. It is a generally recognized principle of modern surgery that the main point and great goal to which we must direct our efforts is to perform an absolutely aseptic operation. If you have solved that problem, you will have surmounted the great difficulty, and while careful attention and nursing are very essential, I insist upon it that it necessarily requires the skill of the operator to secure such results as those of which we have just heard.

N. B.—Dr. W. Gill Wylie promised (by his brother, Dr. R. H. Wylie) to send in a report of the gynæcological work in his division of Bellevue Hospital, but the promise has not been fulfilled, though subsequently requested by the Secretary to do so.

Official Transactions.

A. M. JACOBUS, *Secretary.*

TRANSACTIONS OF THE AMERICAN GYNÆCOLOGICAL SOCIETY.

(Continued.)

Third and Last Day, May 6, 1897.

*When to amputate in Preference to the Repair of a Lacerated
Cervix by the Usual Method.*

BY THOMAS ADDIS EMMET, M.D., NEW YORK.

(See page 344.)

DISCUSSION.

Dr. H. T. HANKS (of New York): I am particularly pleased with the paper because of late we have heard some which seem to advocate high amputation of the cervix in preference to the lateral operation for the repair of lacerations. I am glad that the author has so clearly brought out the points whereby we can differentiate those cases which should receive this treatment. This subject should be thoroughly thought out and every case treated on its own merits.

Dr. PAUL F. MUNDÉ (of New York): I think this operation described by Dr. Emmet is a great improvement over the operation employed by Schroeder and followed by Martin and other German operators, which consists in excising the cervical tissue and turning in and folding up the flaps into the cervical canal and stitching them there. I have always followed the old Emmet operation in all cases where it has been possible to do so, but have often excised more tissue than that calls for, although I have put in the stitches in the old way. I do not amputate much of the cervix. The method of using the vaginal mucous membrane to cover over the stump of the cervix is, of course, an old one, but it is of great service in cases where an elongated cervix has been amputated. Occasionally, after having put in two side sutures to control the arteries, I have amputated as much as was necessary of the cervix with the knife, and

have then stitched with catgut the vaginal mucous membrane to the lining of the cervical canal. I always do anterior and posterior colporrhaphy and Alexander's operation in those cases where there is hypertrophy and prolapse of the uterus.

Dr. J. RIDDLE GOFFE (of New York): I am glad to hear the author advocate the removal of all diseased tissue in the repair of lacerations of the cervix, but I am opposed to the term "amputation of the cervix." I do not find any condition of the cervix that ever demands such complete amputation as has been described by the author. In the treatment of epithelioma of the cervix, high amputation of the cervix was formerly advocated, and, accepting that as a proper procedure for such a condition, I would say that cancer of the cervix is the only condition in which amputation is allowable. In the light of the present day, however, such treatment of cancer is no longer admissible. The radical operation of hysterectomy is always the preferable procedure. On general principles, then, I would say that complete amputation of the cervix is an operation to be condemned. The uterus is normally in a state of unstable equilibrium, and in the maintenance of this position the cervix is an important element. In all diseased conditions of the cervix therefore enough of it should always be retained to preserve its due proportion of the organ, and in this field conservative work has a proper place. All lacerations of the cervix, no matter how extensive or how much complicated by infiltration and disease, can be repaired and a normal cervix secured by the application of the Emmet operation of trachelorrhaphy modified in accordance with the particular indications of each individual case. A very common condition that results from laceration of the cervix is an elongated, thickened anterior or posterior lip with extensive disease in its Nabothian glands, while the other lip remains comparatively healthy. In such cases the healthy lip is treated by denuding the surfaces in accordance with Emmet's method, while the diseased tissue in the other lip is entirely removed and the end of the lip trimmed off to correspond in length to the healthy lip. Sutures are then passed as usual, the strip of mucous membrane of the healthy lip being depended upon to maintain a patulous canal. When an extensive amount of disease is present in both lips, they are both treated in accordance with the plan described above as applicable to the diseased condition of the longer lip, the ends of both being rounded

off on a curve, if necessary, to secure a proper length. The sutures are passed in accordance with the original Emmet operation, but, before being tightened, a tent of iodoform gauze, rolled firmly, is passed through the internal os and left projecting into the vagina for the purpose of establishing and maintaining a cervical canal. This tent is left in place until the fourth or fifth day, when it is removed without any apprehension in regard to the canal remaining patulous. The point, then, on which I differ from the author of the paper is that there is no condition of the cervix which has yet been discovered that requires the complete obliteration of that part of the uterus. In cases in which the cervix is elongated to an extreme degree, enough of it should be removed to restore the proper relation between the fundus and cervix, but in no cases should it be cut off flush with the vaginal pouch.

Dr. A. PALMER DUDLEY (of New York): I believe Dr. Emmet wished to be understood as saying that this operation is not intended to take the place of any operation that will save the cervix. His idea was to supply a method to repair those in which the original Emmet operation is not applicable. There are some cases of elongated cervix where the latter protrudes at the vulva and which demand amputation.

Dr. BACHE McEVERS EMMET (of New York): I must take exception to the gentlemen who have preceded me. Dr. Goffe objects to the term "amputation." Amputation is the only thing that can be done when the tissues cannot be repaired. Such cases absolutely demand amputation, whether it be excision on a straight line or in a conical shape.

As to Dr. Dudley's remarks about excessively long cervixes, I will not say there are no such cases, but they are really atrophied cervixes which are covered with lax vaginal mucous membrane which has been dragged down.

Dr. A. P. DUDLEY: My remarks referred to cases of elongated cervixes in which I was sure there was no prolapse of the vaginal wall. One of my patients was a virgin forty years of age.

Dr. E. C. DUDLEY (of Chicago): It will generally be found in the class of cases under discussion that the difficulty in the old Emmet operation is that the scar tissue is inaccessible. I have practiced a modification of the Schröder operation, as follows: I divide the cervix laterally on both sides, hold the flaps wide apart with tena-

cula, and cut out all the diseased parts after the plan of Schröder. Sutures are introduced in the usual way, the flaps being turned in and stitched to the lining of the uterine canal. By this method all the diseased cervical mucous membrane is gotten rid of and vaginal mucous membrane is substituted for it.

Dr. MUNDÉ: As Dr. Dudley describes it, it is really Schröder's operation.

Dr. THOMAS ADDIS EMMET (in closing): It is always our custom to go abroad for a new operation. Schröder's operation is really Emmet's operation. As far back as 1866, Dr. Sims conceived the idea of repairing the cervix in this way, but he never practiced the operation successfully on account of the oozing of blood under the flaps and an occasional abscess. I do not now cut the cervix off square, because there is danger of opening into the bladder or peritonæal cavity, but I cut out all scar and diseased tissue in a conical shape until I reach healthy tissue.

In regard to the objection to the term "amputation," no other name can be given to it. We amputate tissues which we cannot cure, and the idea of any trouble coming from the removal of the entire cervix is altogether theoretical.

I wish to emphasize the fact that this operation is not in any way intended to take the place of the ordinary operation for repair of lacerations of the cervix, and that the only difference between the Schröder operation and mine is that he makes a kind of square shoulder in making the incision, while I carry mine up straight.

The Results of One Hundred and Forty-Seven Operations for Retroversion of the Uterus.

BY A. LAPHORN SMITH, M.D., OF MONTREAL.

(See page 325.)

DISCUSSION.

Dr. PAUL F. MUNDÉ: In 1884 I was the first to perform Alexander's operation in this country. I am gratified to see how generally it has been accepted by men who saw no good in it at one time. Dr. Smith's admirable description of the first part of the

technic is the same that I have always employed. The operation is indicated in those cases where there is a movable, retroposed uterus and appendages which are not diseased, and is nearly always a permanent success. It is not applicable to cases in which there is a prolapse of the uterus. The author has described ventral fixation of the uterus for the correction of retrodisplacement and prolapsus. I never perform this operation because I once lost a patient from intestinal obstruction after this had been done.

Dr. BEVERLY McMONAGLE: Our treatment of retroversion should be governed by the individual case. Alexander's operation will pull the uterus forward in a simple retroversion but will not raise the uterus, and in the hands of most men it is followed by sup-puration and unsightly scars on the abdomen. I, myself, think it better to open the abdomen in the median line, break up adhesions, inspect the tubes and ovaries and suspend the uterus after the method of Kelly. My results have been excellent and permanent. Although the dangers which may be incurred should pregnancy follow this operation have been exaggerated, it does interfere with pregnancy. Fixation of the uterus is bad whether this is done above or below. The uterus should not be fixed anywhere. Patients often complain of pain in the vagina after vaginal fixation.

Dr. A. P. DUDLEY: I will never again perform ventral fixation. Only last week I was obliged to do a hysterectomy because a loop of intestine had become caught between the stitches after the uterus had been suspended. It also interferes with child-bearing, and I know of a case where death of the foetus was caused by the pressure due to the efforts of the imprisoned uterus to free itself. I have at this time a patient, about seven months pregnant, who has to have morphine daily to relieve the intense pain which is caused by the growing uterus pulling on the stitches.

I have no use for Alexander's operation unless I can make a positive diagnosis of perfect appendages. In several cases I have shortened the round ligaments after a method of my own, which consists in denuding the anterior surface of the uterus and attaching to it the round ligaments through an abdominal incision. The operations of Dr. Goffe and Dr. Mann, except that there is no denudation of the uterus and that the former makes his incision in the vagina, are almost the same as mine. I do not think the method of approaching through the vagina for fixation of the round liga-

ments is safe, because I believe there is danger of injuring the bladder and ureters in reaching the appendages.

Dr. CHARLES P. NOBLE: I have to report the death of one of my patients in labor as a result of ventral fixation, and I also know of another case which died during the past year from the same cause. Ventral fixation is unjustifiable in child-bearing women. Suspension of the uterus as done by Kelly, however, is different. I have employed Alexander's operation with more and more satisfaction, and I do not consider a case a failure if a ligament breaks, for it can easily be sought for and found. There are one or two practical points in connection with the operation. Some of my patients have had pain after Alexander's operation, and I had come to the conclusion that this was due to the use of buried sutures; such, however, is not the case, for patients complain of this pain when buried sutures have not been employed. Pain is probably due to the pinching of a nerve. There is no danger of hernia after this operation if one closely follows Bassini's method in closing the wound.

Dr. H. J. GARRIGUES: I do not use Alexander's operation and do not agree with Dr. Mundé that when the ring has been found the knife should be discarded, for it must be used to sever the tendinous threads that go to the interior of the canal. In only one case was I unable to find the ligament. I have often combined the operation with colporrhaphy and with good results.

In regard to prolapse, which is the descent of a small uterus and hypertrophy of the vaginal portion, this demands different treatment. Amputation of the cervix should be performed in such cases and the vaginal mucous membrane stitched to the stump of the cervix. This not only causes the uterus to become lighter but there follows an involution by which it further loses much of its weight.

ITEMS OF INTEREST.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Meeting at Louisville, October 5, 6, 7, 8, 1897.

The Executive Committee met recently at Louisville, in conjunction with the local Committee of Arrangements, the following being present: Drs. Stucky, Grant, Mathews, Love, Holloway and Reynolds. It was determined to make the coming meeting the largest and best in the history of the Association, and everything points to a fulfillment of this endeavor. The railroads will make a round-trip rate of one and a third fare, or probably one fare. The address on surgery will be delivered by Dr. J. B. Murphy, Chicago; the address on medicine by Dr. John V. Shoemaker, Philadelphia. Titles of papers should be sent to Dr. H. W. Loeb, Secretary, St. Louis, Mo.

THE CHAIR OF GYNÆCOLOGY AT BELLEVUE HOSPITAL.

It is with pleasure we announce the recent appointment of Dr. Henry C. Coe, of New York, to the professorship of gynæcology at the Bellevue Medical School and as an attending gynæcologist to Bellevue Hospital. He has succeeded to the position in these institutions of the late Dr. Lusk. Dr. Coe has been very generally and favorably known by his writings on this specialty, and we believe that as a lecturer he will fully justify the wisdom of his appointment to these very important and honorable posts.

We cordially wish him success.

ANNOUNCEMENT.

The Medical Gazette Publishing Co., of Cleveland, Ohio, announces a small volume soon to be issued with the title, "About Children." The author is Dr. Samuel W. Kelley of the Cleveland College of Physicians and Surgeons. The book will contain six lectures filled with information for nurses, medical practitioners, students and all who have the care of Children. Advance orders will be filled in September.

It is with pleasure that we give space to the above announcement. The forthcoming volume is by the well-known editor and

part-proprietor of *The Cleveland Medical Gazette* and is published by *medical men*. This is a step in the right direction and we gladly welcome it. We look forward to the day when medical books as well as periodicals will be published exclusively by firms in which physicians will have at least a controlling influence instead of the system so largely in vogue at present in lay publishing houses, where the question of publication is submitted to some medical employee, often of little knowledge and even less experience, and the fate of a medical work decided by incompetence if not by prejudice and spite. As an example of this system, we call to mind the case of a very eminent gynæcologist whose work was refused by one of the leading publishers of this city on the ground that "there was no room for any new book on gynæcology." A Philadelphia firm immediately published the book, which proved to be the most original that had appeared, and its publication in this country was quickly followed by English, German and French editions. Later it transpired that the above ingenuous advice had been given by a younger gynæcologist in the employ of the New York firm, purely from motives of self-interest and with the expectation that his identity would remain hidden. It is to obviate the possibility of such tricks, to assure competency of judgment and to enable medical authors to place the responsibility for the acceptance or refusal of their works where it belongs, that we need medical publishing houses exclusively under medical control. It is the duty as well as to the interest of the profession to publish their books under medical auspices and a general and practical encouragement of this design would soon provide even greater facilities, in a material sense, than any at present controlled by lay publishing firms.

We wish the Medical Gazette Publishing Company success in its present venture and a large field of future usefulness.

A just and impartial *review* of Dr. Kelley's work will appear in this JOURNAL as soon as we have received an advanced copy.

EDITOR.

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HYSTERECTOMY.*

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The customary routes for the operation of hysterectomy are at present (*a*) per vaginam, (*b*) the supra-pubic, and (*c*) the sacral. In the past the uterus was removed only for myomata and malignant disease. In recent years the uterus is being removed for bilateral diseases of the appendages, for metritis, endometritis, puerperal sepsis and for so-called hystero-epilepsy. The justification of hysterectomy in any given case must rest on present recognized pathologic processes and remote consequences.

History.—The idea of removing the uterus through the vagina originated with Soranus, a Roman obstetrician in the reign of the Emperor Hadrian (117-138). All of the early operations were done for prolapse and inversion of the uterus, and doubtless the uterus hanging between the limbs suggested the idea to Soranus. Berengarius of Bologna in 1507, gave a description of the removal of the uterus through the vagina. Schenck, in 1617, reports cases where the uterus was removed through the vagina in the whole or in part, chiefly by midwives or ignorant persons. In 1792 Laumonier is reported to have removed a uterus after applying a ligature to it. It

* Read before the June meeting of the Chicago Society for Gynæcology and Abdominal Surgery.

was doubtless prolapsed. Reports may be found through the literature from 1700 onwards where the uterus in whole or in part was removed through the vagina by persons ignorant of the anatomy or pathology or the gravity of the operation.

Dr. Senn reports a case by Johnson in 1819 where in a case of chronic inversion Johnson tied a silk ligature around the inverted uterus and tightened the ligature daily until the twelfth day, when the ligature had almost cut through, he amputated the remainder of the uterus. The patient ultimately recovered. Webe ligated an inverted uterus, and the distal portion sloughed off in eight days. Before 1800 the uterus in whole or in part had been frequently removed by ligature or the knife in nearly all cases for some form of prolapse or inversion.

Vaginal hysterectomy was performed by Sautier, of Constance, in 1822 and again by Recamier in 1829. For the half century following 1829 many failures only kept it in the background, except for cancer. With the advent of antiseptic surgery vaginal hysterectomy was revived in the publications of Czerney, as noted by Dunn, in a Vienna medical journal. From 1880 to 1885 the vaginal hysterectomy gained ground by the labors of Péan, Terrier and Richelot. However, before 1880 it was an attractive curiosity for a non-French physician to see Péan do a vaginal hysterectomy. In 1888, a famous discussion occurred, in the Surgical Society of Paris, in which Verneuil, a surgeon of wide renown, vehemently opposed vaginal hysterectomy and placed in its stead the ecraseur. The real history of the progress of vaginal hysterectomy dates from the violent discussions which occurred in the Paris Surgical Society of 1888 and 1891, when the procedure was strenuously opposed by Verneuil and favored by Richelot, Bouilly, Terrier, Péan and Segond.

Modern hysterectomy is the result of a long and tedious process of eliminating faulty surgery. However, the best surgery is built upon its faults. The Germans, led on by the French, devised and perfected a technique for vaginal hysterectomy which has slowly grown into general favor. The chief rule governing the vaginal hysterectomy developed by the Germans was that the uterus must be quite movable, so that it could be drawn down to the vulva. But vast numbers of the uteri which need extirpation are absolutely immovable.

To the celebrated French surgeon, Pèan, is due the credit of first putting into practice the idea of removing a fixed uterus. This was a bold action, but Pèan succeeded. It was thought the mortality from such an operation would be so great that it would be abandoned. Thus, step by step, since (1813) Langenbeck definitely devised and executed a plan to remove the carcinomatous uterus, until the perfection of modern technique, vaginal hysterectomy had slowly but certainly grown into favor.

All useful surgical operations have long periods of growth. They require time to develop whence conflicting opinions may subside. All the errors of the operation must be so far as possible eliminated. In fact, the surgical success of any operation must be built on its faults. Advances of surgery have been the results of hosts of laborers, although a few fortunate individuals have utilized the product by some successful step or modification, producing more or less of a surgical epoch. Marked progressive epochs in surgery are generally the repetition of some old view modified. This is especially true of hysterectomy, but particularly of vaginal hysterectomy, which for centuries has been considered, tried and retried with failure and success, but owing to lack of technique and proper instruments was practically abandoned, to be renewed with the invention of vaginal specula and traction forceps.

At the beginning of the present century physicians began the invention of two instruments requisite for gynæcologic operation, viz.: specula and traction forceps. I have heard the venerable Karl Braun, who sat in the gynæcologic chair of Vienna school for forty years, say, "Gynæcology began when Simms bent his spoon and pulled back the perinæum." But this view must be considered only an announcement of a distinct epoch of progress, for gynæcology began to advance when (a) hysterectomy was started, (b) when vaginal specula were first invented, (c) when traction forceps were first introduced; all three subjects were of slow development, and continued over centuries. In 1812 Paletta first removed the entire carcinomatous uterus *per vaginam*. But it was not a definitely-planned operation, though he found he had removed the whole organ by subsequent examination. The patient died on the third day. At the beginning of 1800 Osiander, a renowned surgeon of Göttingen, popularized the use of vaginal specula, and introduced curved scissors according to Senn. Osiander devised traction for-

ceps by inserting sutures into the uterine tissue, and in this method was able to control the uterus. In 1813 Langenbeck of Göttingen first definitely planned and removed the carcinomatous uterus per vaginam. Langenbeck's patient lived twenty-six years after the operation, and when she died Dr. Neuber performed a post-mortem on her body. Dr. Neuber found the uterus absent and no recurrence of the carcinoma.

The Indications for Hysterectomy.

I.—Malignancy. Symptoms—Discharges, pain, death.

II.—Myomata; one, soft, œdematous; two, multinodular. Symptoms—Hæmorrhage, salpingitis, peritonitis, reflex irritation, degeneration of viscera, indigestion, invalidism.

III.—Bilateral diseases of the appendages. Symptoms—Inflammatory, suppurative, tubercular, persistent, peritonæal adhesions, neoplasms, dysmenorrhœa, ovarian degeneration, tubal colic.

IV.—Chronic metritis. Symptoms—Hypertrophic, atrophic, dysmenorrhœa.

V.—Extra-uterine pregnancy. Symptoms—When situated in the pelvis per vaginam; when it extends into the abdomen supra-pubic.

VI.—So-called hystero-epilepsy. Symptoms—A neurotic disturbance, a circulatory disturbance, dysmenorrhœa.

VII.—Complete genital prolapse.

VIII.—Inversion of the uterus.

IX.—Genital tuberculosis.

Dangers in Vaginal Hysterectomy.

1. Sepsis. 2. Hæmorrhage. 3. Fistula (intestinal, vesical, ureteral, peritonæal). 4. Vaginal hernia (omental). 5. Shock. 6. Adhesions (peritonæal, visceral). 7. Three per cent mortality (author).

Dangers in Abdominal Hysterectomy.

1. Sepsis. 2. Hæmorrhage. 3. Hernia. 4. Fistula (intestinal, ureteral, peritonæal, ligature). 5. Shock. 6. Adhesions (omental, peritonæal visceral). Six per cent. mortality (author).

Dangers in Sacral Hysterectomy.

1. Injury to ureters. 2. Rectal fistula. 3. Shock. 4. Sepsis.

Routes.

1. Per vaginam. 2. Supra-pubic. 3. Sacral.

Indications of Routes.

1. Diseases existing below the pelvic brim may be attacked per vaginam. 2. Diseases which extend above the pelvic brim may be attached supra-pubically.

General Ætiology.

- Infection — Gonococcus, streptococcus, staphylococcus,
 2. Abortion. 3. Labor.

Results of Vaginal Hysterectomy.

1. Immediate—(a) Relief of pain; (b) relief from pathologic organs; (c) relief of infection (pus); (d) check of growth of malignant disease; (e) the peritonæum is little soiled; (f) slight shock; (g) low mortality; (h) perfect drainage; (i) rapid recovery; (j) sterility.

2. Remote—(a) Early menopause; (b) accumulation of fat; (c) vaginal hernia; (d); (e) no fistula from ligature; (f) a smooth menopause; (g) atrophy of the vulva and vagina; (h) growth of hair (exacerbated). (i) absorption of peritonæal adhesions.

We have a year subsequent to vaginal hysterectomy performed abdominal sections, and found no disturbed relation of the bladder, rectum and sigmoid, and should they be disturbed in relations it will doubtless be due to adhesions previous to the operations. In vaginal hysterectomy the vagina is first lengthened and then shortened.

The results of removal of the appendages in our practice has been that ten per cent of cases returned for advice, treatment or second operation.

The indications for the removal of a myoma are always relative. If the tumor be small, if it be of multilobular variety, *i. e.*, a tumor of menstrual life, give rise to none or only slight symptoms and be of slow growth the tumor may be simply watched, especially if she be some thirty-eight years of age. If the tumor be of the soft oedematous variety which has no regard for age it should be removed at

once. Perhaps a large majority of uterine myomata require no surgical interference, for some forty-five per cent. of women possess myomata at fifty years of age. When surgical interference is demanded for myomata it is hysterectomy—first per vaginam and second suprapubic. The utility of myomectomy is so rarely applicable that it may almost be dismissed. Salpingo-oörophorectomy should be abandoned unless also the uterine artery be ligated down to the neck of the uterus.

Women in the active period of menstrual life, who possess myomata are very prone to salpingitis and recurrent pelvic peritonitis. Experienced operators expect to meet this condition, and it complicates and endangers the surgical procedure. For this very reason hysterectomy is the reasonable plan, for the infection or inflammation first invades the uterine cavity and the endometrium remains in general permanently damaged. The uterine wall subsequently becomes invaded by inflammatory products, and may remain forever crippled. The uterine wall, after infectious invasion, is more liable to gain former integrity than the tubal.

A uterus without tubes and ovaries is useless. At the time of the removal of the appendages it may be diseased or it may become the seat of disease. It may become infected, inflamed and painful, which it frequently does. It may become the source of discharge and hæmorrhage. From it may emanate infection or pain which makes the subject a miserable invalid. Endometritis and metritis may and do arise after the appendages have been removed. From the amputated stump and ligature of the Fallopian tube I have repeatedly observed local attacks of peritonitis, rendering the subject miserable. The infection may pass from the uterus not only by way of the remnants of the Fallopian tubes but by way of the blood and lymph vessels. I have repeatedly operated for the removal of the uterus subsequent to the removal of the appendages. From our experience, embracing nearly five hundred laparotomies, ten per cent. of cases return for treatment subsequent to removal of the appendages. Since endometritis and metritis are the most frequent of all gynæcologic diseases it would appear to be wise to remove the uterus with the appendages to prevent further chances for inflammation, discharge, hæmorrhage or pain.

The endometrium, a glandular or lymphatic organ peculiarly susceptible to infection, especially if it retain its menstrual rhythm,

which it often does subsequent to removal of the appendages, should be removed with the bilaterally diseased organs.

In old chronic recurrent forms of suppurating disease where the appendages are hopelessly destroyed the uterus should be removed with them if the condition of the patient does not contra-indicate it. The uterus does not need removal because it is a useless organ without its appendages or that it can be removed with but little danger to life, but because it is diseased and its retention will induce pain and prolong disturbances of the artificial menopause. In my experience the artificial menopause is much smoother in hysterectomy than in removal of the appendages or part of the genital apparatus. The retained uterus may become the source of pain, of hæmorrhage or discharges. It may become reinfected by the gonococcus or pus microbes. Cancer may develop in it. In bilateral diseases which disorganize, the uterus is nearly always in a condition of hypertrophy of hyperplasia. Its walls are liable to contain plastic exudates, infective microbes and conditions which allow painful exacerbations. Again, its endometrium may become the seat of Noeggeroth's latent gonorrhœa, which means in my opinion that the endometrium has harbored the gonococcus so long that it has become used to the germs. It has become the habitat of certain vegetation which are inert so long as they are not disturbed by exacerbations or not planted in a new soil. If the appendages be removed for suppurative disease, the uterus and adjacent organs are very liable to contract subsequently adhesions which induce pain. Nearly always disease of the appendages begins in the uterus, and therefore the uterus is thoroughly saturated with pyogenic infection before the appendages are diseased. Hence the uterus being the first chain in the pathology of bilateral disease should be sacrificed with the adnexæ. Hysterectomy is indicated in diseases which induce pain, menace life, or render it miserable.

The risk of anæsthesia and operation demand not only that the patient recover, but she must get well. The burden of some operative or pathologic defect will and should not be tolerated. We must secure cures. Symptomatic cures are insufficient. In regard to intestinal fistulæ, they are likely to exist before the operation and may be closed or open at the time of the operation. They are generally passages which connect the bowel with the purulent collection. In tearing away the diseased genitals the open passage

may remain patent or the plug of tissue which closed it may be torn away, renewing the old fistula. I think one of our cases had a recent fistula, reopened or so nearly so that its fragile walls ruptured on the second day after the operation. If the original fistula be large, with well-organized walls, the removal of the purulent collection will be insufficient to cure it. This factor is one of the dangers in vaginal hysterectomy for old chronic purulent salpingitis. It would be difficult to close an intestinal fistula in vaginal hysterectomy when the intestines are fixed in adhesions. If the genitals are in such solid adhesions as to be immovable recurrent complications are rare. In such cases the mucosa is generally destroyed and functionless. In cases of acute pyosalpinx the vaginal incision and drainage may be sufficient for immediate results, but it is doubtful if ultimately satisfactory. The reasons that women do not get well after supra-pubic operations are generally (a) persistent adhesions; (b) persistent fistulæ; (c) pathologic remains of organs, foci of infection, such as the uterus or tubes, remnants of secreting mucosa—infected lymphatics and ligatures. If no infectious focus be left vast masses of exudates will frequently disappear. An historical conversation of forty years ago is still significant. In 1857 Baker Brown helped Sir Spencer Wells in one of his first ovariotomies, though Baker Brown himself had advised against it. The woman died, and Baker Brown remarked to Wells, "It's the peritonitis that beats us." The same is true to-day; every one of our deaths in vaginal hysterectomy died from sepsis.

The Technique of Vaginal Hysterectomy

Which Dr. Lucy Waite and I have followed several years consists in isolating the two uterine and two ovarian arteries and applying on each a ligature and a clamp for thirty-six hours. After thorough asepsis of the operating field the cervix is closed by three to five strong silk ligatures. The cervix is then drawn down and held as near to the vulva as is safe with a ligature or traction forceps. With scissors or knife the cervix is freed by a circular incision through the vaginal wall. By vigorous use of the index fingers the uterus is freed from the rectum and bladder. The sacro (rectal) uterine ligaments may be divided without fear of hæmorrhage, well up toward the uterine arteries. The uterine ar-

teries are so freed that the index finger passes from behind the broad ligament forward above the artery which is isolated, tied with silk, and clamped close to the uterus. The ureters are pushed well outward to avoid injury. The severing of the uterine arteries allows the uterus to descend sufficiently to free the appendages, enabling the operator to draw them into the vagina. At this stage of the procedure one may rotate the fundus forward or backward by the aid of traction forceps. This method of rotation often facilitates the ligation and clamping of the ovarian arteries. A piece of sterilized gauze tied to a string may be passed into Douglas's pouch to prevent the descent of the intestines. Sterilized gauze is now passed into the pelvic cavity and packed into the vagina. It is a good plan to introduce a soft rectal bougie into the rectum as a guide. The hæmastatic forceps are removed in thirty-six to forty-eight hours, and the gauze on the fourth or fifth day. It is good policy to stretch the rectum well after the operation to allow gas to escape or to introduce a rectal tube occasionally. The ligatures are gradually removed from the tenth day on by gentle traction. A vaginal douche should be given daily after the gauze is removed. The patient may sit up on the eighteenth day and leave the hospital on the twenty-first.

The technique of the extra-peritonæal method of removing myomata is: After the abdominal incision the myoma is drawn out on the abdomen and the peritonæum is closed with catgut sutures from the upper angle of the wound to the posterior surface of the uterus or myoma. The ovarian arteries at the ends of the Fallopian tubes are ligated with catgut and severed. The broad ligament on each side is then split or separated down to the uterine arteries, which are isolated to avoid injury to the uterus and ligated. At this stage a peritonæal cuff is made as large as possible by separating the peritonæum from the uterus (or myoma) below the round ligament and Fallopian tubes. The peritonæal cuff is most conveniently produced by making a circular incision at any chosen point around the uterus through the peritonæum, only after which strip the peritonæum downward. If one attempts to produce a peritonæal cuff of more tissue than the superficial layer of the peritonæum, a profuse hæmorrhage is almost sure to follow; however, after the ovarian and uterine arteries have been definitely isolated and ligated in sight (not in mass) bleeding ceases. The uterus, with its myoma, may

now be amputated at any chosen point. The circumference of the uterine peritonæal cuff should be sutured with catgut to the margin of the peritonæum in the original abdominal incision. This entirely closes the peritonæal cavity which could be done as soon as the peritonæal cuff is made. The endometrium may be cut out of the uterine stump to any desired extent and the uterine walls closed over the cavity with catgut sutures. In the final closure of the abdomen two or three sutures may be passed through the entire abdominal walls on each side, and also through the uterine stump in order to hold the stump from dropping down into the pelvic cavity to avoid tearing the peritonæal cuff. To secure free drainage for primary wound secretions, two of these sutures may remain untied for forty-eight hours. To secure safe and efficient drainage a few strands of gauze may lead from the uterine stump to the abdominal surface for forty-eight hours. In this operation I must acknowledge one suggestion from Senn, and that is the closure of the peritonæum separately from its upper angle of the abdominal wound to the posterior surface of the uterus. The remaining steps of the operation have been repeatedly performed during the past five years.

In our surgical practice this has proved an excellent operation for an extra-peritonæal stump. It avoids shock, secures perfect drainage for primary peritonæal wounds secretions, and one need not in this operation leave any ligatures within the peritonæal cavity. As we do not use the sacral or Kraske method in practice, we will omit the description of the technique.

The superiority of vaginal hysterectomy over abdominal hysterectomy may be noted in the following remarks:

1. Vaginal hysterectomy allows the most perfect known peritonæal drainage.

2. If the vaginal hysterectomy be done anatomically, *i. e.*, the two uterine and two ovarian arteries be isolated and tied, the ureters will not be injured, and the procedure is one of the safest of all capital operations. We ligate the uterine and ovarian arteries with silk and place a clamp on each artery for thirty-six hours. This procedure enables the broad ligament to grow into the upper end of the vagina, and it elongates the vagina.

3. All the ligatures are outside of the peritonæal cavity, or can be removed.

4. There is little shock and rapid and complete convalescence.
5. In pelvic suppuration there is minimum danger of septic infection from soiling the peritonæum.
6. A minimum amount of trauma is inflicted on the intestines and other viscera.
7. It is seldom followed by suture or mural abscesses, or of sinuses, following the use of drainage or infected ligature.
8. In vaginal hysterectomy time is not so important as in abdominal hysterectomy.
9. Vaginal hysterectomy is hard on the operator, but easy on the patient, while abdominal hysterectomy is the reverse.
10. So far as I can see, it does not materially weaken the pelvic floor to perform vaginal hysterectomy. However, in certain individual cases partial prolapse of the vagina occurs.
11. The menopause seems to be easier when the uterus is entirely removed, than when only part is removed.
12. Recovery after vaginal hysterectomy is much smoother, less vomiting, pain and thirst than there is after removing the appendages through the abdomen. Thirst is perhaps due to the congestion of the peritonæum after section.
13. Vaginal hernia is less after vaginal hysterectomies than it is after removing the appendages per abdomen.
14. Vaginal hysterectomy is the operation of choice in so-called cases of hystero-epilepsy where every trace of genitals that aid in the menstrual rhythm should be removed with almost entire safety.
15. Vaginal hysterectomy has low mortality, few post-operative complications, and a complete restoration to health in a vast majority of cases.
16. In vaginal hysterectomy the vagina should not be closed nor buried sutures used.
17. The matters to avoid in vaginal hysterectomy are the wounding of the bladder, rectum (any bowel) and ureters. The operation should be learned on the cadaver, or one should assist a skilled gynaecologist at say, twenty-five operations, when the technique will be slowly acquired. Vaginal hysterectomy, skilfully performed, is a very safe operation.

What cases should be performed vaginally?

(a) All pelvic suppurating cases.

(b) All pelvic diseases which do not reach above the pelvic brim.

(c) Ectopic pregnancy, if it be low in the pelvis.

Almost all cases possessing tumors, growths or swellings which extend above the pelvic brim, should be attacked per abdomen.

18. Vaginal hysterectomy allows frequently an extra-peritonæal operation. The great mass of intestinal adhesions may remain unbroken and the general peritonæal cavity remain unopened. Removal of septic foci will allow many of the adhesions and most of the exudates to absorb. The patient will frequently be restored to health and resume the juvenile step.

19. From personal experience we found that the following class of cases are almost perfectly and safely cured alone by vaginal hysterectomy:

(a) Non-suppurative diseases, when by repeated inflammatory pelvic attacks, the tubes, ovaries, uterus and many loops of intestines, are held in dense masses of exudates and adhesions.

(b) Painful uterus and localized painful points in the annexæ after laparotomy.

(c) Abdominal fistulæ following laparotomy for removal of appendages which resist cure by curettement, cauterization, or operation when the ligature cannot be found or removed with safety.

(d) Chronic suppurating disease attacking not only the appendages but also the parametric and periuterine tissues demand vaginal hysterectomy for a cure.

The general views in favor of hysterectomy as against removal of the appendages may be noted in the following propositions:

1. The uterus is useless without the appendages.

2. The uterus does not get rid of its inflammation, endometritis and metritis, for from six months to two years after the operation.

3. The uterus, with its inflamed tissue is a source of pain and disease. The uterine walls are almost always diseased with diseased tubes, and should be removed.

4. The uterus is a point where disease cannot only start, but persist.

5. The menopause seems to be less distressing when the uterus is entirely removed, than when only part is removed.

6. It is not conservative gynæcology to retain diseased organs.

7. It is said that sentiments of the patient are against removal of the uterus. So was the patient's sentiment against removing the tubes and ovaries a few years ago, but "sentiment" can be overcome,

and also a gynæcologist cannot go by what a patient says, but by experience and pathological conditions.

8. It is, according to my observation, that the neurosis following removal of the uterus, for bilateral diseases of the appendages is smoother than it is after removal of both appendages only.

9. The disease begins in the uterus, and therefore the uterus, as the first offender and the persistent menace, should be removed.

10. The first disease starting in the uterus generally leaves the endometrium crippled with the uterine wall in the same condition, jeopardizing the patient to recurrent attacks.

11. The blood vessels, lymphatics, muscliculi and nerves of the uterus once damaged by disease and without appendages is useless, and a menace to the life of the patient.

Removal of the tubes and ovaries does not always stop the pain, hæmorrhage and discharge. The uterus remains as a breeding ground for germs and disease.

To pronounce vaginal hysterectomy unsurgical is absurd, for it cures the patient.

To say vaginal hysterectomy is mutilating because it removes an unoffending organ is not true, for the uterus is often an offending organ subsequent to operations.

After the appendages are removed the uterus becomes a vestigial organ, a remnant, and such relics or fading organs are more or less dangerous, as is observed in the appendix, parovarium, gill-clefts, mammary glands and the urachus.

Vaginal hysterectomy is not so fatal as removal of the appendages.

If, after vaginal hysterectomy, the broad ligaments be drawn down into the vagina and held there by ligatures or clamps the healing will draw the vagina up and elongate it. In the last seventy-five cases we followed this plan with good results.

So far I have not observed that hysterectomy produces a materially viscous relation of the pelvic organs. We know that it shortens the vagina, and like removal of the appendages produces a certain kind of atrophy of the genitals, especially in young subjects. It changes to a slight extent the vaginal axis on account of the broad ligaments drawing it upward, hence would tend to visceral prolapse. In short, those tissues supplied by the uterine and ovarian arteries, will be subject to atrophy, but the atrophy of genitals

must be sought for in the peripheral territory of the pudic nerve and the pelvic sympathetic. The terminal branches of the (sacral plexus) spinal nerve supply both the internal and external genitals. The pudic nerve is formed sometimes by branches from the first, second, third and fourth sacral nerves, but generally it is formed by the third and fourth sacral. In hysterectomy the fourth sacral nerve is severed, but not the pudic proper supplying the external genitals (and the rectum). But by the severing of the fourth sacral the external genital region of the pudic also suffers reflexly from atrophy. Yet apparently the portion of the pudic nerve which supplies the rectum does not atrophy. However, the observation of the blood vessels in the rectum must tell the story. Do hæmorrhoids arise or subside after hysterectomy? In regard to the atrophy of the region supplied by the pelvic sympathetic I have only observed it in the territory of the pudic, or the region supplied by the second, third and fourth sacral nerves, *i. e.*, the terminal (genital) branch of the sacral plexus. It appears to me that hysterectomy is less profound and less tedious in effect on the nervous system than removal of the appendages.

My experience and observation convinces me that a woman is not unsexed any more by hysterectomy than by the removal of the appendages.

The most profound atrophy in hysterectomy occurs in very young subjects. The vulva shrinks, it takes on senile atrophy, the skin folds smooth out, the fat disappears, secretions lessen, the blood vessels narrow and the parts become pale and shiny. The vagina shortens and straightens, the rugæ become smooth, the secretions disappear, the vaginal wall assumes a leathery consistency, a conical shape and loses its elastic accommodation. The evil omen announced that damaging changes occur in the spinal cord after hysterectomy falls to the ground when it is considered that precisely the same condition will occur at a menopause which arises as an artificially produced one. Any atrophy arising after hysterectomy is a natural process of life, of development and of evolutionary process. The evil lies only in the untimely production.

The atrophy of the pelvic sympathetic or the terminal portions of the hypogastric plexus, which includes the pelvic brain or cervico-uterine ganglia, is doubtless the essential factor in this peculiar atrophy of the genitals. The radiating nerve strands of the large

pelvic brain controls the field of nourishment in the region of the ovarian, uterine of pudic arteries. The female genitals are like the urachus, the meso-nephros, the appendix, the placenta, the hypogastric and umbilical, the omphalo-mesenteric duct, the gill-clefts, *ductus notali* and the placenta—they arise, functionate for a season, fulfill a purpose and subside forever. They are essential stages in the evolutionary progress of the life of the organism; hence, genital atrophy is a natural process.

TREATMENT OF UTERINE MYOMATA AND DISEASES OF THE UTERINE ANNEXA PER VAGINAM.

BY WILLIAM H. WATHEN, M.D., LL.D., OF LOUISVILLE, KY.

Only a few years ago uterine myomata and nearly all diseases of the uterine annexa requiring surgical operation were treated by abdominal section, but the progress in the treatment of these diseases per vaginam has recently been more rapid than the change in any other department of surgery. No one will deny the superiority of the vaginal method in the treatment of uterine myomata, or of diseases of the annexa with accumulations of pus, or any condition requiring surgical treatment, if the mortality is as low as that resulting from the supra-pubic method, and the results of the operation otherwise as good.

I will briefly allude to the following conditions which may be treated per vaginam, or by the combined vagino-abdominal method: Where both tubes or both ovaries are so injured as to be incapable of performing their physiological functions, the uterus and the annexa should in all instances be removed, and experience has shown that gynæcologists who are familiar with this kind of work have more rapid convalescence and more universally good results than gynæcologists who operate upon these cases by the supra-pubic method. As I have often said, the uterus can be of no possible use when the annexa are so diseased that the woman is incapable of child-bearing, but if left when the annexa are removed, is very often the cause of an imperfect cure, even symptomatically, and

may encourage the development of diseases that may destroy life or cause confirmed invalidism. Nearly all operators who have extensive experience in removal of the annexa without removal of the uterus, have been greatly annoyed by the return of many of these patients complaining of symptoms sometimes as bad or even worse than before the operation; but many of these cases have been entirely relieved of all local and reflex trouble by a secondary operation, removing the uterus. In some of these cases there are uteri that macroscopically, and I might say microscopically, appear to be nearly normal, that cause continual pain after the annexa have been removed, but after a subsequent hysterectomy the woman is entirely cured. In these cases there must be some form of nerve disease, or some form of disease pressing upon and irritating the periphery of the nerves, that we have not yet been able to understand.

If in these cases the operation is performed *per vaginam* there is less difficulty in separating the adhesions and removing the pus-tubes than by the supra-pubic method, provided we adopt the method of Segond and others, of clamping off the uterine arteries, bisecting the uterus, and separating adhesions as they appear when each half of the uterus is drawn down through the vulva. It is seldom that we have to separate adhesions that cannot be seen better than by the abdominal route, and more easily managed, with as little, and generally less, danger.

If the functions of both annexa are destroyed and there has been leakage from a tube causing a large pelvic abscess (the so-called encysted peritonitis), the case may be treated more successfully by the vaginal route by observing the following method: Having separated the vagina from the neck of the uterus, the pus cavity may be easily entered by dissections with the finger, or the finger aided by the scissors, and the pus drained away without disturbing the protecting layer formed by the agglutination of the intestines with inflammatory exudation; then the uterus may be bisected just as in other cases, and the tubes and ovaries removed. If, perchance, we occasionally meet with a case where we are unable to remove the entire pus-tube it may, in hysterectomy, be perfectly drained so that it does not prevent a perfect convalescence. Where the tubes or ovaries that do not contain pus are unable to perform their physiological functions, and are so diseased and so adherent as to neces-

sitate their removal, the operation may be performed per vaginam with less difficulty than in the above-named condition. Where we are not positively decided that the ovaries and tubes of both sides should be removed, there is no trouble in demonstrating this fact by approaching the structures per vaginam, and there is practically no danger in this exploratory operation. If we find the ovary and tube on one side in a healthy condition, except adhesions to other structures that may be separated, this can be done per vaginam and the diseased annexa on the other side removed per vaginam without disturbing the uterus. Or, perchance, if this is not in every case possible, a pus-tube or an ovarian abscess may be successfully treated by thorough incision and complete drainage. While all of these cases may not entirely recover by this method of drainage, we find that most of them do, and nearly all are much improved. Where the adhesions of the tube and ovary can be entirely separated they may be brought into the vagina and ligated or clamped and removed. If we find after the woman is under the influence of anæsthesia, and before the operation is begun, that the annexa of one side are in a normal condition, but that there is an accumulation of pus in the tube or ovary, or in both, or in the broad ligament upon the other side, there are many instances where we are able to enter the pus cavity and drain, without opening the peritonæal cavity, by dividing the posterior vaginal fornix and dissecting in the direction of the side diseased, being careful not to enter the peritonæal cavity, but going between the peritonæal layers of the broad ligament, behind and under the uterine artery and the ureter. This operation is without danger, can be performed in a few minutes, and many of these cases will be entirely cured.

Extra-uterine pregnancy before tubal rupture can be treated successfully per vaginam by opening the cavity through the posterior vaginal fornix, bringing the gestation sac into the vagina, and removing it after ligation or clamping. If rupture has occurred into the folds of the broad ligament, and we find a large accumulation of blood filling the pelvic cavity, such as is ordinarily treated by laparotomy, it may be removed by vaginal incision and drainage with a mortality practically nil. The operation is so simple, and causes so little pain, that it may in some cases be performed without even giving the patient an anæsthetic. These facts have been demonstrated so clearly in my practice and in the practice of other gynæ-

cologists that I believe vaginal incision in such cases will become almost the universal method.

There is no consensus of opinion as to the exact results that follow vaginal incision into the broad ligaments, or into Douglas' pouch, for acute infection following abortion or labor at term. In many cases the results have been such as to justify the conclusion that if the incision is timely, anticipating involvement of the general peritonæum, or systemic involvement, by the entrance into the blood vessels or lymphatics of pathogenic germs, or the toxins of the germs of putrefaction, a further extension of the disease may be prevented; and the incision may, and logically ought to, where it is possible, anticipate the formation of pus, either in the tubes, in the pelvic cavity, or in the folds of the broad ligaments.

I do not believe that carcinoma or sarcoma of the uterus should be treated by the supra-pubic method; the only excuse offered for the selection of this method in such cases is that the operation may be made more thorough by the removal of infected glands outside of the uterus. I do not believe that this is justifiable, for the reason that when these glands are affected the disease has involved so many structures that there will positively be a recurrence in a very short while, let the extent of the operation be what it may. Experience has not demonstrated otherwise, and I feel sure that time will prove the wisdom of confining these operations to the removal of the uterus by the usual method after ligating the ovarian and uterine arteries at any point between the uterus and the pelvic wall. This may be done more successfully and in less time per vaginam; and I would advise the use of clamps, because if the disease has extended into the broad ligaments, the slough caused by the clamps may extend beyond the invasion. In these cases the operation may be more easily performed, and made more complete, by bisecting the uterus as in other cases requiring hysterectomy.

Small uterine myomata connected with the neck of the uterus or lower part of the body and not extending into the endometrium, may sometimes be enucleated by vaginal incision without opening the peritonæal cavity and without removing the uterus. Where the uterine myoma is not larger than a child's head, and the vagina is of average dimensions, we may in most cases successfully remove it per vaginam by morcellation; and where the uterine myoma is small, but a hysterectomy is indicated because of the severity of local symp-

toms, it may be removed without morcellation if we bisect the uterus.

In every case of total hysterectomy I contend that the vagina should be carefully cleansed after the patient is on the operating table, for we cannot otherwise be positive that it is an aseptic field, and if we neglect this precaution our patient may have septic infection from the germs in the vagina. Recognizing the necessity of this precaution, and having carried it into effect, then in a very little while the vagina may be separated from the uterus and the uterus dissected from adjacent structures for from one to two inches and the uterine arteries clamped upon each side, thereby controlling further hæmorrhage from this source, and practically removing all danger of injury to the ureters by either continuing the operation per vaginam or by the supra-pubic method. If we can succeed in completing the operation per vaginam by adoption of any one or of several of the approved methods of the best hysterectomists, it is proper to do so; otherwise immediately open the abdomen and complete the hysterectomy by the supra-pubic method. The most difficult part of the operation by the supra-pubic method is the ligation of the uterine arteries and the avoidance of injury to the ureters, but this is accomplished without danger in the vagino-abdominal method, the ureters being thrown so far from the tumor that by no means will they be included in further ligation or clamping. In most cases we can now remove the tumor rapidly by first ligating and separating the round ligaments, then clamping each broad ligament by long clamps, one applied close to the uterus, the other close to the pelvic wall. These may extend down to the base of the undivided broad ligaments, and we may immediately divide the broad ligaments between the clamps and remove the tumor. If the clamps are well made, embrace all the broad ligaments, and are carefully applied there will seldom be any immediate danger of hæmorrhage, and we may then ligate the ovarian arteries, or any small arteries in the broad ligaments, in continuity, using small ligatures. Having accomplished this, there is nothing further to do except to close all connective tissue space in the pelvic cavity by a running or a continuous catgut suture, leaving an opening into the vagina large enough to drain the pelvic and abdominal cavities. If there is considerable oozing from the incised vagina and surrounding connective tissue, it may usually be quickly controlled by

tamponing with gauze. This may be best accomplished by passing forceps through the vagina by which the end of the gauze may be brought through the vulva and then the upper part carefully packed into the vagino-pelvic opening.

I will not discuss the question as to whether it is better to do a total hysterectomy or leave a part or all of the cervix attached to the vagina. I cannot, however, believe that any operation but total hysterectomy will be finally recognized as an elective method, and I am sure I will be sustained in this belief by men who have had extensive experience in total hysterectomy and have observed how beautifully these patients convalesce when we have this perfect vaginal drainage.

While there may be a few gynæcologists who now treat the pedicle in supra-pubic hysterectomy externally by the neude, I consider this method practically obsolete, and I should not adopt it except in cases where the condition of the patient is such that the operation must be quickly completed to prevent death from shock.

SACCULATION OF THE PREGNANT UTERUS FOLLOWING VENTRO-FIXATION.

BY LUCIA E. HEATON, M.S., M.D., CANTON, NEW YORK.

On the 17th of January, 1896, Mrs. C. E. L., a stout, well nourished woman, came to my office complaining of back-ache, dragging pains in the abdomen and painful menstruation. She was thirty-one years old, and her history was as follows:

At about eleven years of age she fell astride a plank at a picnic, but was not conscious of severe injury. She menstruated at thirteen, and at sixteen began work in a confectioner's, which necessitated standing. Shortly after this she began to have severe back-ache and pelvic pain. She was married at twenty-one, and a month later had complete prolapse of the womb. Pregnancy followed, and the child was born September 1, 1886. It was a breech presentation, and both cervix and perinæum were lacerated. From this time the patient's health was poor, and early in 1889 she lost a seven months' foetus. On the 26th of May, 1893, she was operated on for her prolapsus by Dr. L. S. Pilcher in the M. E. Hospital of Brooklyn. The operation chosen was that of ventro-fixation, and it was supplemented by a careful repair of the cervix and perinæum. The result was good, and Mrs. L.'s health was much improved.

My examination of the patient was negative until the pelvis was reached. Here the fundus of the uterus was found firmly attached to the abdominal wall. The adhesions which were formed by the operation had not yielded in the least, and the whole anterior wall of the uterus was so closely applied to the abdominal wall that the cervix rested against the pubis with the os but little above the meatus urinarius. This position of the uterus forced down the anterior wall of the vagina together with the bladder until the anterior fornix was obliterated and a marked cystocele formed. There was no interference with the functions of the bladder.

The patient became pregnant in March, 1896; was extremely apprehensive lest she should not be able to carry the child to term, and begged for an abortion. It was very soon evident that the fundus

would not be able to rise with the advancing pregnancy, and I wrote Dr. Pilcher asking his advice. He very kindly replied under date of May 20:

386 Grand Ave., Brooklyn, May 20, 1896.

DEAR DR. HEATON: Yours of recent date in regard to Mrs. L. is received. The thing to do for her is to open the abdomen sufficiently to permit the detachment of the adhesions that are holding the uterus down and preventing its ascent with the advancing pregnancy. I wish you would send her down to the M. E. Hospital for that purpose. Certainly premature labor should be brought on only as a last resort to save life, but not merely to relieve discomfort.

Very sincerely yours,

L. S. PILCHER.

Mrs. L. could not well leave home at this time, and as there was no necessity for immediate interference I decided to keep her under observation a little longer before acting on Dr. Pilcher's advice. Meanwhile I asked Dr. J. N. Bassett to see the patient with me, and the pregnancy progressed so favorably that we thought it best not to interfere. The fœtus was persistently in the transverse position, but freely movable, and with plenty of room, though the fundus uteri never rose much above the umbilicus. There was more pain in the back than usual, especially on rising from the bed or chair, but otherwise the patient was perfectly comfortable, though very nervous and apprehensive. She sang in a church choir regularly until October; took long walks and did her own light housework until within two weeks of term.

Labor pains began on the morning of December 29, but subsided in an hour or two. There was a slight show of blood without pain on the same evening. At four A. M. of the following day pains began again but subsided on the coming of the doctor. At five P. M. labor was resumed and continued until midnight, when the membranes ruptured. The os was undilated and the presenting part too high to reach. The child was strong, freely movable, and apparently in no danger since not yet engaged. The mother was tired and the pains, which had never been strong, were failing. I called Dr. Bassett, and, after careful examination and consideration, we decided to let the mother rest. A sedative was given and labor interrupted until four o'clock the following day, when it was resumed

with better pains than at any time before. The os was slow to dilate, however, and I again called Dr. Bassett and we decided on forced delivery. It was performed by Dr. Bassett with full antiseptic precautions, and with the patient under chloroform anæsthesia.

Dr. Bassett has very kindly furnished me with the following description of the condition he found upon entering the womb:

"On the evening of December 30, 1896, I was called in consultation by Dr. Heaton to see Mrs. L. The waters were escaping and labor pains occurring once in about twenty minutes. An examination found the os high in the pelvis, and dilated to about the size of a twenty-five-cent piece. I advised to wait a few hours. Twenty-four hours later I was again called. The waters had nearly all escaped. The pains were of little or no force. An examination revealed the os in the same position, and but little if any more dilated than at the previous examination. It was thought best to give an anæsthetic, make a thorough examination, and perhaps induce labor. I dilated the os with my fingers, gradually passing my hand into the vagina and through the dilated os into the womb. I could feel no presenting part but, apparently, the child was in front and separated from my hand by a mass of muscular tissue as thick as the abdominal wall. I continued to pass my hand gently upward until I found the head, the presenting part, in the right hypochondriac region. Further exploration found the body of the child in a large anterior sac or bag of the uterus. I thus had the head of the child in a small posterior sac and the body of the child in a large anterior sac, the neck of the child lying over the edge of the sac as over a shelf. After various efforts to change the position and get the body from the large anterior sac, I pushed the head across the abdomen to the left hypochondriac region, pushed the body of child to the right side of the mother, and by long-continued traction on the shelf-like fold of the uterus slipped it over the fundus of the child. The head readily came into position at the brim of the pelvis. Delivery was accomplished by forceps."

The child, a ten-pound boy, was dead born. It was already enfeebled when delivery was begun. The cord encircled the neck on its shelf-life support, and was compressed by every contraction of the uterus and later by the descent of the head; while the length of time necessary to delivery would alone have made its survival improbable.

The mother was in a condition of shock for the six hours following delivery, but afterward made an interrupted recovery. No douches were given. The cervix and perinæum were both somewhat lacerated. I desire to call particular attention to the following features of the case:

1. That it was entirely analagous to the infrequent cases of posterior sacculation of the uterus resulting from impaction of the fundus under the sacral promontory.

2. That while those cases are said to be always reducible, this was irreducible since it was caused by the firm adhesion of the uterus to the abdominal wall.

3. That while cases of posterior sacculation can be diagnosed by examination, this case could not be diagnosed, since the child was entirely beyond reach from the vagina.

4. That every contraction of the uterus compressed the neck of the child, encircled as it was by the cord, and thus endangered its life while it was apparently safe, being in the abdomen and freely movable.

5. That this freedom of movement was entirely deceptive, since it was simply a balancing to and fro of the body upon the uterine septum after the manner of any solid body floating in a liquid with but a single point of support.

6. That the bladder and its attachments were drawn up into the sulcus of the uterus, thus subjecting it to the danger of rupture.

7. That the child passed meconium freely sixteen hours before its death.

The report of this case is presented in the belief that it is of value as illustrating a hitherto unrecognized danger resulting from ventro-fixation.

CASES OF MELANCHOLIA CURED BY REMOVAL OF
INTERSTITIAL FIBROMATA OF THE
CERVIX UTERI.

BY T. K. HOLMES, M.D.,

Ex-President of the Canadian Medical Association, Chatham, Ontario.

In 1867 a case of puerperal mania came under my care, and I found, on examination, that it was associated with a laceration of the cervix uteri. The case resisted all means of treatment until the laceration was cured, when recovery of her mental condition was prompt and complete. Subsequent experience and observation convinced me puerperal mania is nearly always dependent on some lesion of the generative organs, and in 1885 I was able to present, in a paper read before the Canadian Medical Association, a report of fourteen cases, in all of which sanity had been restored by treatment directed to the pelvic organs. Since that time ten additional cases of this form of insanity have been cured by me in a similar way, and three cases of apparently incurable melancholia associated with interstitial cervical fibroma have resulted in complete-recovery on removal of the tumors. It is to these that I desire to call attention more particularly in this paper.

The causal relation between disease of the generative apparatus and puerperal mania impressed itself upon me so strongly that I suggested the subject to Dr. Bucke, of the London Asylum, more than twenty years ago, with the view of having the question tested still further by the abundant material in that institution. Dr. Bucke, with the true scientific and progressive spirit that characterizes him, approved at once of the suggestion, but obstacles that could not be overcome at that time prevented the adoption of our aims.

Quite recently this subject has received the attention and endorsement of many men eminent in the profession, notably Dr. Robert Barnes, Dr. Rho  , of Baltimore, and Drs. Bucke and Hobbs, of London, and I have no doubt that when the suggestion made in my paper in 1885 of having a specialist in gyn  cology appointed to

every asylum for the insane is acted upon the percentage of cures in these institutions will be higher than at present, and that many women will be restored to their families in health and happiness who would otherwise end their days in an asylum.

As my second series of ten cases was very similar to the fourteen cases reported in 1885, it would not be desirable to describe them in detail on this occasion, and I shall, therefore, confine myself to a history of the three cases of melancholia, which seemed to depend on the presence of cervical fibromata. Two of these attacks occurred in the same patient under circumstances that made them quite unusual and of more than ordinary interest.

Cases I. and II.—Mrs. E. R., of good family history, had always been well, and was married at the age of twenty-four years, and was in perfect health during the first two years of her married life, when she began to show signs of mental depression, which gradually increased until her husband feared she would commit suicide, and provided her with a companion, with the view of preventing it. Her symptoms were not such as led me to suspect uterine disease, and no pelvic examination was made. She became pregnant for the first time when in this mental condition, and I hoped that maternity would cure her. I attended her when labor occurred, and found at the time of my first visit that the first stage was completed, but that a hard mass in the posterior wall of the cervix prevented the expulsion of the child's head. After an ineffectual attempt to deliver with forceps, Drs. McKeough and Fleming were asked to see the case, and, as a result of the consultation, craniotomy was performed, and the child delivered in that way. Her mental condition grew worse after her confinement, and at the expiration of a month I removed the tumor by enucleation. She began to improve almost immediately, and at the end of two months was perfectly well in every way. She was delivered naturally of a living child two years subsequently, and remained in good health for nine years, when she again became melancholy, and gradually lapsed into her former condition of mind. At this time she lived in Montana, and was brought from there to Chatham by her husband in 1895 for treatment. On examination, I found a fibroid as large as a small lemon about the site of the one formerly removed. This I also enucleated, and at the end of three weeks she left the hospital. Her mental condition did not improve as had been anticipated, and two months later ex-

amination revealed a second fibroid of about the same size occupying the posterior lower segment of the uterine wall and encroaching on the cervical tissue. The removal of this was followed by prompt improvement in her mental condition, and she has since remained quite well.

Case III.—Mrs. W. C. was sent to me by Dr. Langford, of Blenheim. She belonged to an unusually healthy family, and was herself a robust, well-developed woman. She had been married several years but had never been pregnant. About two years before she came under Dr. Langford's care she began to suffer great mental depression, and this increased until he was consulted. An examination by Dr. Langford showed the presence of a cervical fibroid, and through his courtesy I was asked to remove it. The operation was not attended by any difficulty, and was followed in a short time by complete restoration to health.

Affections of the cervix and lower segment of the uterus produce a much more profound impression on the mental and nervous condition of women than disease of other parts of the generative apparatus, because the former are much more abundantly supplied by sympathetic nerves.

Next after these tissues the vagina seems the most susceptible, as I have on many occasions seen an aggravated vaginitis produce great mental irritability, and on one occasion I saw, in consultation with Drs. Fleming and Backus, a case of violent puerperal mania which seemed to depend upon an inflamed vagina, and which soon recovered under treatment directed to that affection. The wheels of progress often move slowly, and are retarded by a spirit of conservatism that is not by any means always to be censured, but I am satisfied that the opposition that existed twenty years ago to the treatment of some cases of insanity of this class will gradually be overcome by the irresistible force of truth and scientific observation and practice.

THE CHANGES IN THE UTERINE MUCOSA DURING
PREGNANCY AND IN THE ATTACHED
FŒTAL STRUCTURES.*

(Continued.)

BY J. C. WEBSTER, M.D. (EDIN.), F.R.C.P.E., F.R.S.E.,

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CHORION.

(Figs. 155 to 211 and Previous Figures. Also 253.)

The chorion is best described as the outermost covering of the blastodermic vesicle which comes into direct relationship with the decidua serotina and the decidua reflexa. At first this layer is purely epiblast. Very early, according to my hypothesis, it increases in thickness, forming a plasmodium-like mass in which vacuolation occurs giving rise to a reticulated structure—the first or primitive placental arrangement.

After the formation of the mesoblast, its somatopleure layer, attached to the inner surface of the epiblast, extends outward in the strands and projections of the epiblast to give rise to the permanent structure of the placenta.

When the blending of epiblast and mesoblast elements of the chorion occurs we do not know. Minot believes that in Reichert's (supposed) twelve or thirteen day ovum the chorion consists only of epiblast. Merttens, however, in his (supposed) six or eight day specimen describes mesoblast as being present. It must be inferred either that Merttens and Reichert have wrongly described the age of their preparations; or, that in Reichert's case, owing to imperfect examination, the exact condition was not accurately ascertained; or that the date at which the epiblast and mesoblast blend is a variable one.

* Read before the Royal Society of Edinburgh and awarded the first Research Prize of the Royal College of Physicians of Edinburgh in 1896.

Microscopic Appearances—Epiblast.

In the earliest specimens described, *e. g.*, Merttens, the epiblast consists of two layers, deep and superficial. The former is composed of cubical or somewhat rounded cells, lying in close contact and with well-marked outlines. The cell-substance stains lightly; the nucleus is rounded or oval and contains a good deal of chromatin. This layer is generally known as Langhans' *Zellschicht*.

The superficial layer consists of darkly staining granular protoplasm, nucleated, but with no distinct cell-outlines. Small projections extend downward between the adjacent parts of the tops of the cells of the deep layer. This layer may be called the *syncytium* or *plasmodium*. It varies in thickness. In some parts it is only about .0026 mm. thick, possessing very small nuclei; in this state it is not unlike an endothelium in appearance. Generally it is much thicker than this, the nuclei being large. The nuclei do not possess much chromatin. Here and there groups of nuclei are seen closely placed together. Merttens describes a finely-reticulated arrangement in the protoplasm of the syncytium. At intervals projections of this layer, varying in size and shape, extend outward from the surface.

The nature of these two layers of cells has been much disputed. Thus Langhans and Eden, while regarding both layers as of foetal origin, consider that the deep one is mesoblastic. Tafani believes that both layers are of maternal origin. Turner, Waldeyer, Winkler, and others think that the deep layer is foetal and epiblastic, and the superficial one maternal.

There can be now no doubt that both layers are foetal and epiblastic, as Kastschenko and Minot have urged. The examination of a series of specimens from different stages of pregnancy establishes this view.

Mesoblast.

The mesoblast is very thin, in Merttens' case being not more than .026 mm. It consists partly of mucoid tissue, partly of a homogeneous matrix finely fibrillated, with spaces here and there, partly of delicate fibrils and spindle-shaped cells lying parallel with the surface. The cell-protoplasm stains lightly, the nucleus deeply.

As to the exact nature of the early villus-formation we have no

exact information. If my hypothesis be correct, the first formed villi are merely the trabeculæ of the early plasmodial reticulum, formed between ovum and decidua.

Even if this hypothesis be not correct, and if the earliest villi be simple outgrowths of the chorion, we know that their structure is purely epiblastic, and composed only of the outermost or plasmodial layer. When the other elements of the chorion enter into them we do not know. In Reichert's ovum the villi were supposed to be entirely epiblastic. In Merttens' some contained mesoblast, though the capillaries had not formed. In Coste's early specimen the villi were described as solid and partly hollow buds of epiblast, into which mesoblast had not extended. From a careful study of the various early cases which have been published, it is very evident that the period of the first extension of the mesoblast into the villi varies in different cases, or that observers have wrongly estimated the age of their specimens.

Neither do we know how much of the chorionic membrane sends out villi at first. Do they grow from the whole surface, from an equatorial band, or from all parts save one pole?

We have yet to learn, also, when branching of the villous outgrowths begins. In Merttens' case they showed commencing simple division. In Reichert's they were entirely unbranched. According to my hypothesis some of the early epiblastic villi, being formed from strands of the plasmodial reticulum, might present a branched appearance.

But, undoubtedly, in all the early specimens the villi are, for the most part, simple. They extend outward as thick stalks of epiblast, mainly at right angles to the surface and at unequal distances from one another. In some the free ends are much thicker than the roots. In most the stalks are of pretty uniform thickness. Some of these are merely sessile buds. Several are vacuolated. Here and there irregular or reticulated masses of plasmodium project from the chorionic membrane. I believe that these are the remains of the early-formed reticulum. Projecting from some of the larger villi are also seen processes of irregular size and shape, some of which are vacuolated. Several of these are probably the remains of broken reticular strands.

The mesoblast which is first found in the villi has no capillaries, nor do we know exactly when it first enters. It is mainly mucoid

tissue, but presents the other features which have been described in the chorionic membrane.

Many of the early villi soon become attached to the decidua. It is probably these which mainly develop into the large villus-stems found in the late months of gestation, from which small branches grow. At this early period some of the villi are attached merely by the outer layer of syncytium. I believe that these have been formed by the extension of mesoblast into strands of the reticulum attached to the decidua. The great majority become attached by a proliferation of the deep layer of epiblastic cells at their ends, forming a thick rounded mass, the superficial layer of plasmodium becoming thinned, stretched and split off. The cells of this proliferated mass (*Zellsäule*) are irregularly rounded, faintly staining, and possess nuclei rich in chromatin.

When the villi are firmly fixed their outer plasmodial covering on the sides appears generally to correspond with the corresponding layer in the neighborhood on the decidual surface.

These remarks have applied generally to the whole chorion in its very earliest state. I will now continue the account of the two portions:

Placental Part.

Non-placental Part.

Placental Part of the Chorion—End of First Month.

Accordingly to Kastschenko, the villi begin to become more numerous in relation to the serotina during the second half of the first month. They are, undoubtedly at this time, more numerous and more branched than in the earlier specimens. Many run a straight course, but others are somewhat wavy.

Kastschenko has studied the epithelial covering at this period with greatest care. He describes the outer plasmodial layer as possessing a network of delicate threads, the sections of which give rise to a finely granular appearance. The nuclei are irregularly arranged, in some parts scanty, in others massed together. They measure from .005 mm. to .015 mm (being larger than at the end of pregnancy), and are mostly round or oval. Where the layer is thin the nuclei are elongated and tend to lie parallel with the surface. They stain somewhat unequally, the larger ones being of a lighter

shade than the smaller. Over the ends of the villi the plasmodium is usually thickest. Buds and strands extend from their sides as processes of various sizes. Some of these contain vacuoles of various sizes; these may either contain nothing or a finely granular matrix, probably the young mesoblast.

According to Kastschenko the vacuolation begins by the dilatation of one of the spaces of the network which makes up the plasmodial protoplasm. As it increases in size, the surrounding protoplasm is compressed and its nuclei flattened. Kastchenko thinks that the side-processes are not concerned with the increase of the villi, but only the end-processes. I do not agree with him on this point.

At this early period it is to be noted, the chief proliferative activity is in the epiblastic elements of the villi. As pregnancy advances, we shall see that this gradually becomes a less marked feature. The deep layer or *Zellschicht*, at the beginning of the third week, consists of a single, or, in some parts, a double row of cells, whose protoplasm stains more lightly than the plasmodial layer; it has a network-like structure of looser texture than that of the plasmodium. In some parts this layer seems to be uninterruptedly continuous with the outer one; in other parts only by means of processes between which are found irregular spaces. As pregnancy advances the lines of division between the cells become more marked. According to Kastschenko the *Zellschicht* is not found over the whole chorionic membrane until toward the end of the first month. Its development varies considerably in different sections of the same specimen.

Sixth Week.

The villi are now much more numerous and more branched. They still appear relatively thick. The branchings are found over a greater extent of the villi than at an earlier period. The most noticeable feature about the epithelium, both of chorionic membrane and of villi, is the very small amount of the deep layer (*Zellschicht*) as compared with that of the superficial plasmodium. In many villi no deep cells can be found at all in parts, even though the core of mesoblast may be present. Here and there in the plasmodial layer of the chorionic membrane small vacuoles can be seen. In some parts, also, it shows a slight tendency to split, while, in



Fig. 155

FIG. 155. SECTION FROM JUNCTION OF DECIDUA SEROTINA AND REFLEXA AT FIVE WEEKS.

a, serotina; *b*, reflexa; *c*, syncytium; *d*, syncytial attachment to villi; *e*, villus.

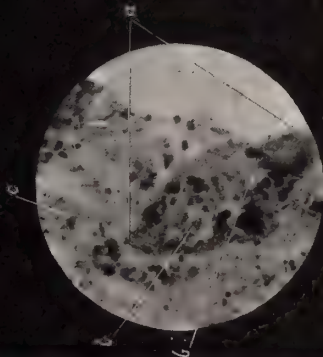


Fig. 156

FIG. 156. SEROTINA AND VILLI, FROM THE SAME.

a, decidua; *b*, villi; *c*, hyaline tissue; *d*, blood sinus; *e*, villus; *f*, part of decidua; *g*, syncytium; *h*, vacuolated syncytium; *i*, solid mass.

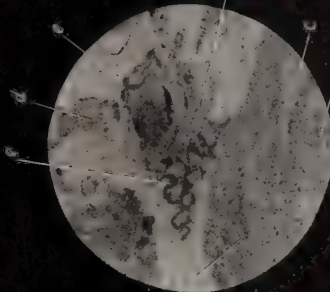


Fig. 157

FIG. 157. SYNCYTIAL MASSES, FROM THE SAME.

a, syncytium attached to decidua; *b*, syncytium embedded in decidua; *c*, decidua.

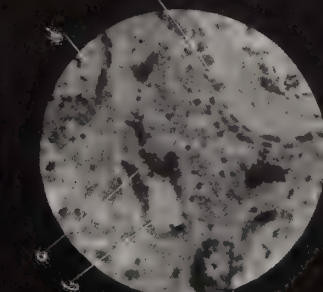


Fig. 158

FIG. 158. MASS OF EARLY VILLI, FROM THE SAME.

a, vacuolated syncytium; *b*, solid mass.

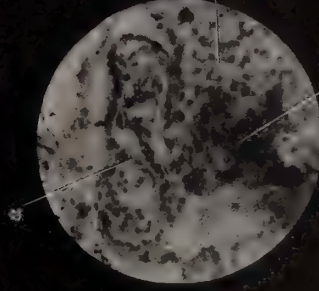


Fig. 159

FIG. 159. SEROTINA AND SYNCYTIIUM, FROM THE SAME.

a, syncytial mass; *b*, vacuoles; *c*, decidua.

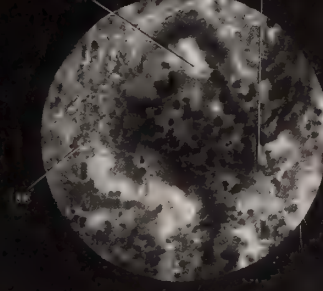


Fig. 160

FIG. 160. EARLY VILLI IN MATERNAL BLOOD, FROM THE SAME.

a, outer portion of villus; *b*, central vacuole; *c*, solid syncytium; *d*, villus in mesoblast; *e*, blood.



Fig. 161

FIG. 161. ANOTHER SECTION FROM FIVE-WEEK ABORTION.

a, large plasmodial mass in inter-villous space; *b*, canalisation in the mass; *c*, blood around villi. X. 290.

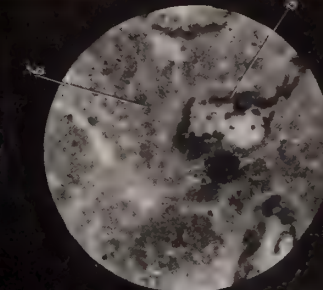


Fig. 162

FIG. 162. ANOTHER FROM THE SAME.

a, early villus; *b*, blood surrounding villi. X. 290.

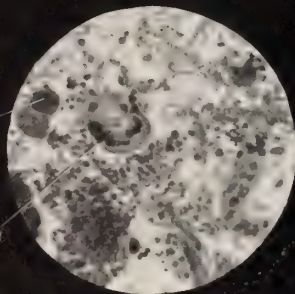


Fig. 163

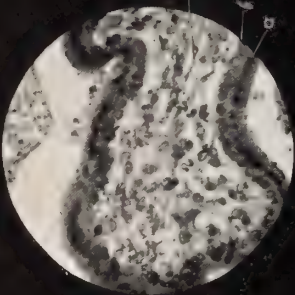


Fig. 164



Fig. 167

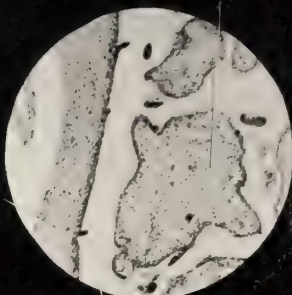


Fig. 168

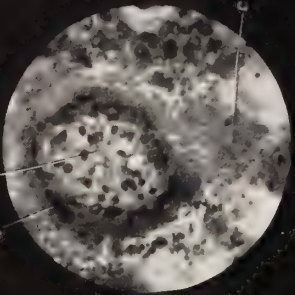


Fig. 165

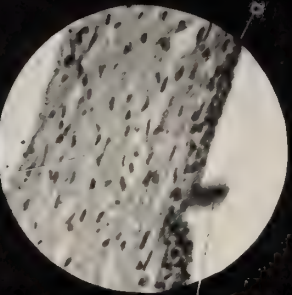


Fig. 169

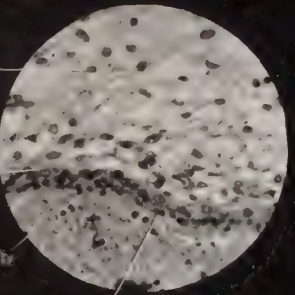


Fig. 166

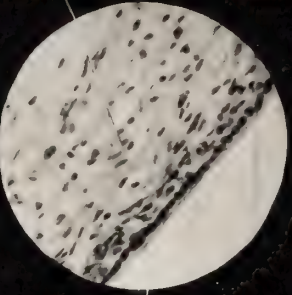


Fig. 170

FIG. 163. ANOTHER FROM SAME.
a, early villus; b, plasmoidal mass;
c, blood around villi. X. 290.

FIG. 164. ANOTHER FROM SAME.
a, outer layer of epithelium of large villus-stem; b, inner or deep layer;
c, mesoblastic tissue; d, blood around villi. X. 290.

FIG. 165. ANOTHER FROM SAME.
a, epithelial covering of villus; note that the deeper layer is very slightly

tissue of chorion; c, villus-stem cut obliquely. X. 80.

FIG. 168. ANOTHER FROM SAME.
a, chorionic bud of epithelium;
b, chorionic connective tissue; c, villus-stem. X. 80.

FIG. 169. ANOTHER FROM SAME.
a, chorionic epithelium; b, bud projecting from surface; c, connective tissue. X. 300.

FIG. 170. ANOTHER SECTION FROM 6-WEEK PREGNANT UTERUS.

a, chorionic epithelium; note the well-marked outer plasmoidal layer and the small number of cells in the deep layer; b, connective tissue; some cells appear to be arranged as a basement membrane under the epithelium. X. 300.

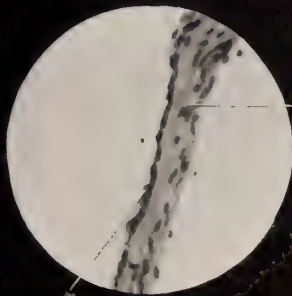


FIG. 171. ANOTHER FROM SAME.
a, amniotic epithelium; *b*, connective tissue of amnion. X. 300.



FIG. 172. ANOTHER FROM SAME.
a, villus-stem; small plasmodial
tissue of amnion. X₃₀₀.

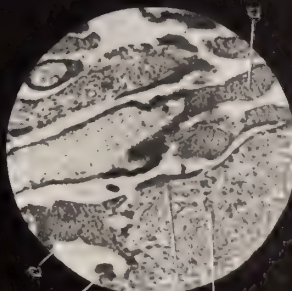


FIG. 171. ANOTHER FROM SAME.
a, amniotic epithelium; *b*, connective tissue of amnion. X. 300.

FIG. 172. ANOTHER FROM SAME.
a, villus-stem; small plasmodial mass among villi; *c*, early villi. X. 80.

FIG. 173. ANOTHER FROM SAME.
a, villus; *b*, early villus with strand of plasmodium. X. 80.

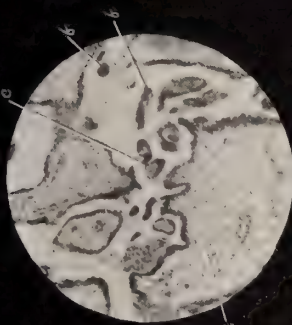


FIG. 174. ANOTHER FROM SAME.
a, serotina; *b*, plasmodial mass on surface; *c*, decidual hillock; *d*, proliferated deep layer of epithelium ahead of villus; *e*, end of villus attached to hillock.

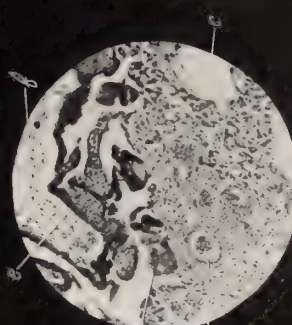


FIG. 175. ANOTHER FROM SAME.
a, serotina; *b*, plasmodial mass on surface; *c*, proliferated epithelium of villus.

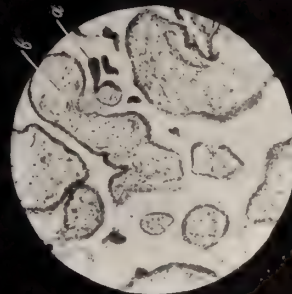


FIG. 176. ANOTHER FROM SAME.
a, serotina; *b*, remains of gland-space; *c*, blood sinus; *d*, plasmodium on surface of decidua; *e*, proliferated epithelium of end of villus; *f*, connective tissue of villus-stem.

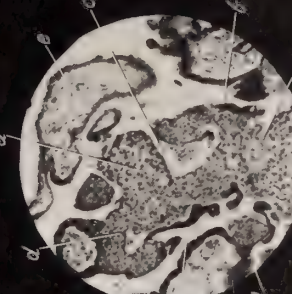
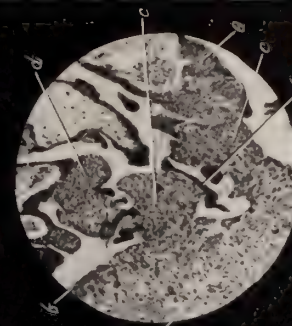
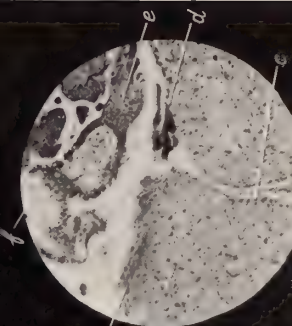


FIG. 177. ANOTHER FROM SAME.
a, decidual hillock of serotina;
b, plasmodium on surface of decidua;
blood sinus in hillock; *d*, villi at



attached, by proliferation of epithelium, to decidual hillock; *e*, villus; *f*, proliferated epithelium of another villus.



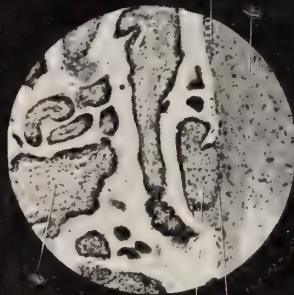


Fig. 179.

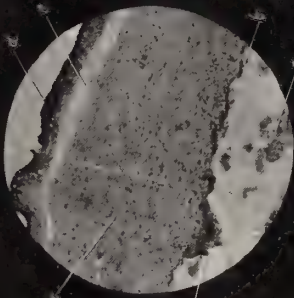


Fig. 180.

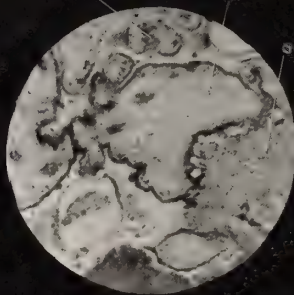


Fig. 181.

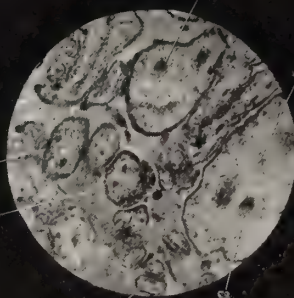


Fig. 182.

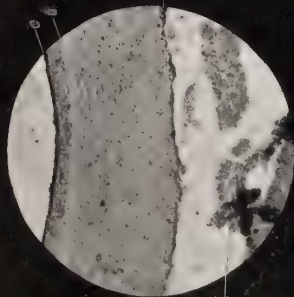


Fig. 183.



Fig. 184.

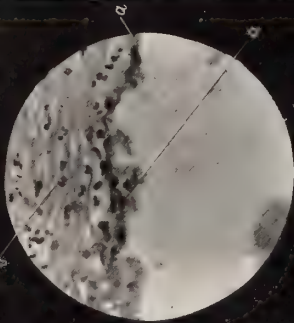


Fig. 185.

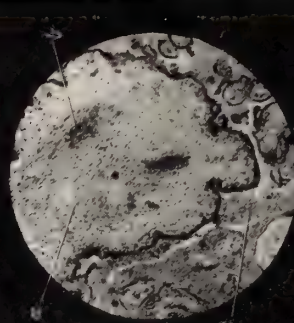


Fig. 186.

FIG. 179. ANOTHER SECTION FROM 6-WEEK PREGNANT UTERUS.

a, serotina; *b*, hyaline degeneration in serotina; *c*, villus attached to serotina; *d*, small amount of proliferation of epithelium of villus; *e*, villus. X 80.

FIG. 180. SECTION FROM SPECIMEN OF A 4-MONTH PREGNANCY.

a, connective tissue of chorion; *b*, chorionic epithelium degenerating

in parts; *c*, delicate connective tissue between amnion and chorion; *d*, amnion; *e*, inter-villous space. X 80.

FIG. 181. ANOTHER FROM SAME. *a*, chorionic epithelium, degenerating in parts; *b*, line of junction of chorion and amnion; *c*, amniotic epithelium; *d*, blood in inter-villous space. X 80.

FIG. 182. ANOTHER FROM SAME. *a*, degeneration of chorionic epi-

thelium; *b*, connective tissue of chorion. X 290.

FIG. 183. ANOTHER FROM SAME.

a, hillock of serotina; *b*, villus attached; *c*, small villus. X 80.

FIG. 184. ANOTHER FROM SAME.

a, small villus; *b*, large villus; *c*, blood vessel of villus; *d*, blood in

inter-villous space; some small masses of plasmodium are seen in it. X 80.

FIG. 185. ANOTHER FROM SAME.

a, villus; *b*, capillary of villus; note the condensed tissue around it; *c*, blood in inter-villous space. X 80.

FIG. 186. ANOTHER FROM SAME.

a, connective tissue of large villus; *b*, condensed tissue around capillary; *c*, blood in inter-villous space. X 80.

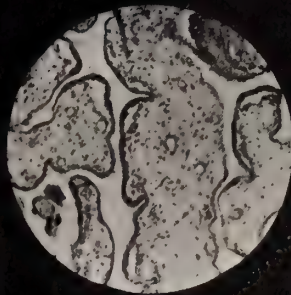


Fig. 187

FIG. 187. ANOTHER FROM SAME. Sections of villi: note the variations in the thickness of the covering epithelium. X. 80.

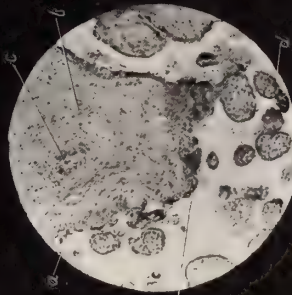


Fig. 188

FIG. 188. SECTION FROM 6-MONTH PREGNANT UTERUS. *a*, amnion: note the projections; *b*, chorion; *c*, blood of inter-villous space; *d*, villus. X. 80.

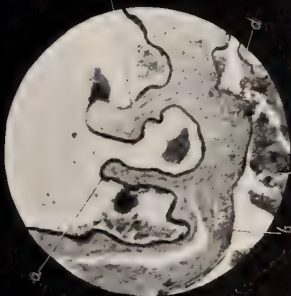


Fig. 189

FIG. 189. ANOTHER FROM SAME. *a*, epithelium of chorion; *b*, connective tissue of chorion; *c*, strand between amnion and chorion; *d*, amniotic connective tissue; *e*, epithelium of amnion. X. 80.

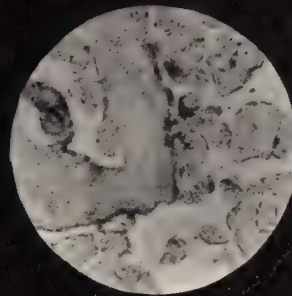


Fig. 190

FIG. 190. ANOTHER FROM SAME. Sections of villi: note the irregular patchy appearance of the epithelial covering. X. 300.

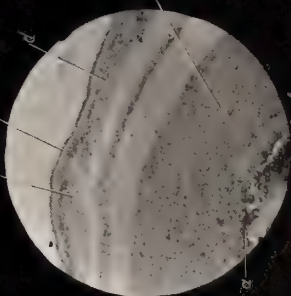


Fig. 191

FIG. 191. SECTION FROM FULL-TIME SPECIMEN. *a*, outer plasmal layer of chorion: it is very patchy; *b*, connective tissue of chorion; *c*, vessel; *d*, villi. X. 80.

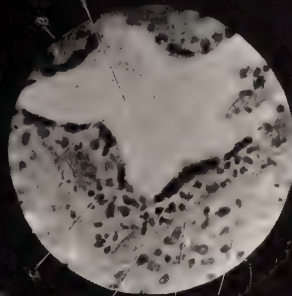


Fig. 192

FIG. 192. ANOTHER FROM SAME. Sections of villi: note the irregular patchy appearance of the epithelial covering. X. 300.

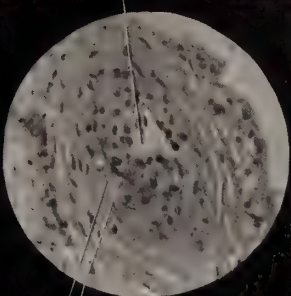


Fig. 193

FIG. 193. SECTION FROM 6-MONTH SPECIMEN. *a*, inter-villous space; *b*, outer layer of chorionic epithelium; *c*, inner layer of chorionic epithelium; *d*, part of villus stem. Note the degeneration in the epithelium. X. 300.



Fig. 194

FIG. 194. ANOTHER FROM SAME. *a*, connective tissue of chorion; *b*, deep layer of epithelium; *c*, outer layer of broken-up masses; *d*, villus. X. 300.



Fig. 195



Fig. 196

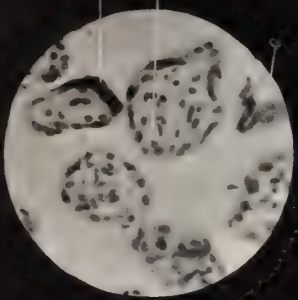


Fig. 197

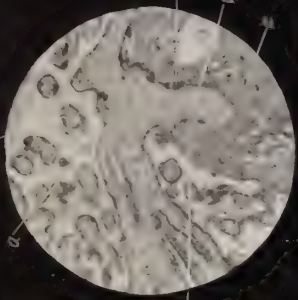


Fig. 198

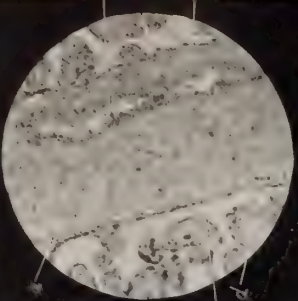


Fig. 199

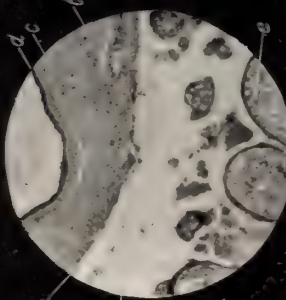


Fig. 200

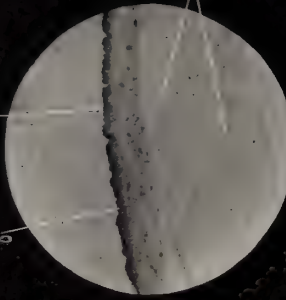


Fig. 201



Fig. 202



Fig. 203

FIG. 195. ANOTHER FROM THE SAME.

a, chorionic connective tissue; *b*, deep layer of epithelium; *c*, superficial layer; *d*, thick deposit of fibrin on epithelium; *e*, blood of intervillous space. X. 300.

FIG. 196. ANOTHER FROM THE SAME.

a, chorionic connective tissue; *b*, degenerated deep layer of epithelium; *c*, hyaline degeneration; *d*, remains of superficial layer of epithelium. X. 300.

FIG. 197. ANOTHER SECTION FROM 6-MONTH SPECIMEN.

a, epithelium of villus; it is mainly plasmodial and not very thick; *b*, capillary; *c*, plasmodial mass in inter-villus space. X. 400.

FIG. 198. ANOTHER FROM THE SAME.

a, villus stem attached to serotum and somewhat embedded in it; *b*, embedded end of villus; *c*, same proliferation of epithelium; *d*, slight proliferation of epithelium; *e*, serotum; *f*, villi. X. 80.

FIG. 199. ANOTHER FROM THE SAME.

a, large villus stem; *b*, artery; *c*, epithelial covering, very thin; *d*, villus. X. 80.

FIG. 200. SECTION FROM FULL-TIME SPECIMEN.

a, epithelium of chorion, degenerated and split up; *b*, chorionic connective tissue; *c*, junction of amnion and chorion; *d*, epithelium of amnion; *e*, villi. X. 80.

FIG. 201. ANOTHER FROM THE SAME.

a, epithelium of amnion; cells are columnar here; *b*, connective tissue of amnion; *c*, delicate strands between amnion and chorion. X. 80.

FIG. 202. ANOTHER FROM THE SAME.

a, columnar epithelial cells of amnion; *b*, connective tissue. X. 300.

FIG. 203. ANOTHER FROM THE SAME.

a, chorionic connective tissue; *b*, villus stem arising from chorion; *c*, patches of epithelium; note that in some parts the epithelium is quite absent; *d*, plasmodial covering of villus stem; *e*, villus. X. 300.

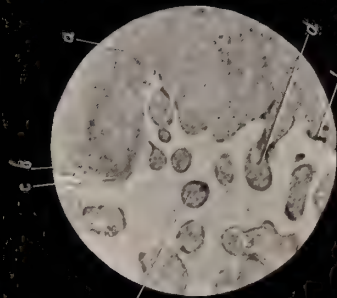


Fig. 204.

FIG. 204. ANOTHER FROM THE SAME. *a*, connective tissue of chorion; *b*, epithelium of chorion; *c*, epithelium absent; here is seen some hyaline degeneration entering into the connective tissue; *d*, origin of villus; *e*, X. 80.

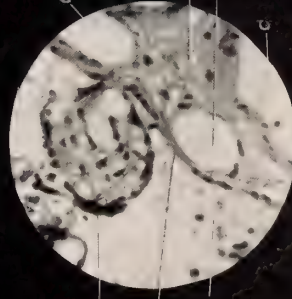


Fig. 205.

FIG. 205. ANOTHER FROM THE SAME. *a*, hyaline degeneration in the superficial layer of epithelium of chorion; *b*, degeneration of deep layer; *c*, connective tissue; *d*, blood in inter-villus space. X. 300.

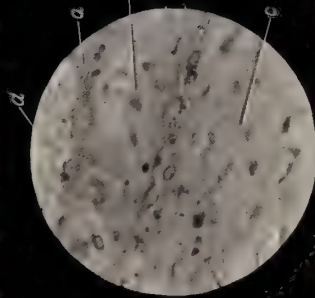


Fig. 205.

FIG. 206. ANOTHER SECTION FROM FULL-TIME SPECIMEN. *a*, villus-stem; *b*, branch-villus; *c*, epithelium; *d*, small villus. Note variations in thickness of epithelium. In parts it is wanting. X. 80.

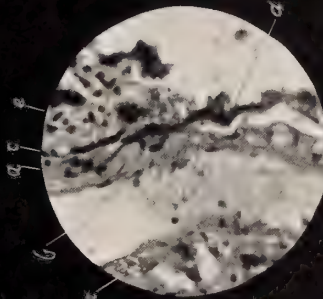


Fig. 210.

FIG. 207. ANOTHER FROM THE SAME. *a*, large villus-stem; *b*, epithelium; *c*, blood-vessel; *d*, branch-villus. X. 80.

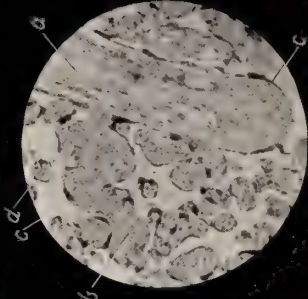


Fig. 208.

FIG. 208. ANOTHER FROM THE SAME. *a*, villi; *b*, connective tissue of large villus; *c*, greatly dilated blood-vessels of villus. X. 80.

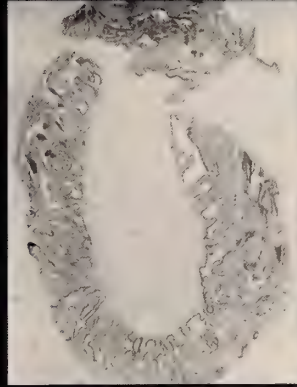


Fig. 253.

FIG. 209. ANOTHER FROM THE SAME. *a*, epithelium covering villus; *b*, part of villus with no epithelium visible on it; *c*, dilated capillary; *d*, connective tissue; *e*, blood in inter-villus space. X. 300.

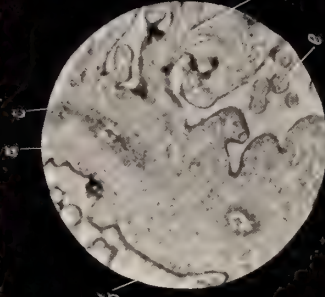


Fig. 209.

FIG. 210. ANOTHER FROM THE SAME. *a*, connective tissue of villus; *b*, dilated capillary longitudinally; *c*, epithelial covering of villus; *d*, epithelium raised from surface; blood in inter-villus space. X. 300.

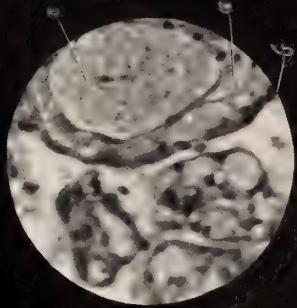


Fig. 211.

FIG. 211. ANOTHER FROM THE SAME. *a*, connective tissue of villus stem; *b*, epithelium; *c*, dilated blood-vessel. X. 300.

FIG. 253. MERTTEN'S DIAGRAM IN EARLY PREGNANCY. *a*, chorion; *b*, decidua. X. 300.

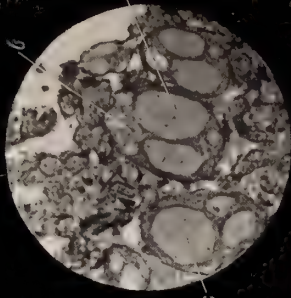


Fig. 208.

FIG. 210. ANOTHER FROM THE SAME. *a*, connective tissue of villus; *b*, dilated capillary longitudinally; *c*, epithelial covering of villus; *d*, epithelium raised from surface; blood in inter-villus space. X. 300.

FIG. 253. MERTTEN'S DIAGRAM IN EARLY PREGNANCY. *a*, chorion; *b*, decidua. X. 300.

patches, it takes on a very deep stain—the early stages of the degeneration which has been particularly described by Langhans. A few small knot-like projections of the epithelium may be seen at intervals, but these are far more numerous on the villi. The villus-stems are mostly oblique to the surface, though some are at right angles to it.

The chorionic mesoblast is more fibrillated than in earlier specimens, and in parts has a dense appearance. It contains more numerous spindle-shaped cells, which, for the most part, lie parallel to the surface. In different places these cells are arranged under the Langhans layer of the epiblast as a kind of basement membrane, the distinction between the two thus being clearly evident. In the villous stems the mesoblast is most condensed at the periphery and at the outer ends. In the small villi it is quite loose, of the delicate mucoid type. In the very youngest villi the mesoblast is very finely granular, faintly staining and vacuolated. Here and there irregular branching cells with round nuclei are found. Leucocytes are found in the spaces. Most of the villi have capillaries; these consist simply of a tube of small, flat, endothelial cells around which the connective tissue is somewhat condensed, though to a different extent in various places.

Among the villi are to be noticed free pieces of plasmodium, irregular in shape and size, presenting the same appearances as the buds and processes attached to the villi. They are evidently sections of the latter.

A few irregularly-rounded masses of considerable size are found lying among the villi—the *Zell-Knoten* of Langhans. This observer believed them to be derived from maternal tissue, while Kastschenko thought them to be formed from villi.

So far as my observations go, I am able to distinguish two varieties of *Zell-Knoten*. One consists of undoubted decidual cells along with a mass of cells which evidently belong to the proliferated *Zellschicht* at the end of an attached villus. Around the whole mass or on parts of it is a layer or masses of plasmodium; some of this same tissue may be scattered throughout the mass. Attached to it may be found one or more pieces of villi. In the decidual elements of this mass fibrinous or hyaline degeneration may be found. This variety of *Zell-Knot* is evidently only the appearance presented by a section through an attached villus-end and a decidual hillock. It

may be found close to the serotina or at some distance from it lying among the villi.

The second variety of *Zell-Knot* is simply the section of several villi packed closely together along with several processes or strands of the plasmodial layer. In these masses no decidual cells are found.

The villi which are attached to the serotina are separated by no regular intervals. They are relatively closer than at the end of pregnancy. They vary in size, and may join the serotina by the main end or by branches. They are oblique or at right angles to it; sometimes a considerable extent of a villus may become attached either directly by the side or by two or more lateral branch-villi. The latter condition is, however, rare. In the great majority the mode of attachment is the same, viz.: by means of the proliferated mass of the cells of the *Zellschicht* at the villus-end. In some cases there is little proliferation, the attachment appearing not to be very firm. The superficial plasmodial layer takes no part in the attachment. It gets thinned and stretched outside the deeper structures of the swollen villus-end, and in this state has been wrongly described by Keibel and others as endothelium from the maternal sinuses in the decidua prolonged over the villus. At the very end of the villus, broken off bits may be pushed by the villus against the decidua where they may remain for some time.

The end of the villus appears to sink for a slight distance into the decidua. In some cases its outline is quite distinct. In others it may be so blended with decidual tissue that the distinction is difficult to make out.

It is very probable that the villus-ends, by means of their epithelium, can absorb decidual tissue. Hart and Gulland have noticed special decidual degeneration around the attached ends. I am not able to corroborate this. Certainly degeneration may be found there in some cases, but not in others.

A few villi only are attached by plasmodial stalks. In these there may be little or no proliferation of the *Zellschicht*. I regard these as remains of early-formed plasmodial stalks which have not been completely penetrated by the mesoblastic core.

Villi attach themselves indiscriminately to elevations and depressions in the decidual surface. In some cases where there is a pit-like depression, it may be occupied by a villus which later may be considerably compressed by surrounding tissue.

This appearance may be erroneously interpreted as the boring deeply into the decidua of a villus. As far as I can make out, such a process occurs in most cases of villus-attachment only to a very slight extent. The capillaries of the villi generally extend throughout their whole length, but in some they do not reach the ends.

Fourth Month.

The connective tissue of the chorionic membrane is denser and more fibrillated, especially close to the epithelium. The epithelium, on the whole, is slightly thinner. Here and there it is irregularly thickened. In some parts it and the adjacent connective tissue are infiltrated with leucocytes. The large cells of the *Zellschicht* are somewhat separated in parts. Occasionally the plasmodial layer is found slightly split off from the deeper layer. Fibrinous or hyaline degeneration is seen in varying degrees of advancement. In several places the plasmodial layer is very thin.

Many more small villi are seen than at an earlier period. The older villi and villus-stems possess denser connective tissue; it is especially condensed around the vessels. The plasmodial layer of epithelium on the villus-stems is very thin as a rule; in some parts staining lightly. The cells of the deep layers are somewhat numerous. All stages of new villus-formation can be found. Among the villi in the maternal blood bits of plasmodium of various shapes and sizes are seen. The distance between attachments of villi to serotina is relatively greater than at a very early period of gestation.

Sixth Month.

The connective tissue of the chorionic membrane is denser; its cells are mainly spindle-shaped. The epithelium is thinned. In some parts it is quite stripped off. In others only a thin layer of plasmodium is found with scattered cells of the *Zellschicht* below. In other places a well-marked *Zellschicht* of one or more rows of cells may be seen. Very few buds are found projecting from the chorionic surface, and they are mostly degenerated. Marked hyaline or fibrinous alteration in different stages is found widespread in the epithelium.

There is a relatively larger number of villi; they are more slender

and more branched than in the earlier months. In the villi the plasmodial layer of the epithelium is the most prominent. It is to a considerable extent flattened, the long axes of the nuclei being parallel to the surface. In many parts it is greatly thinned, no nuclei being visible. Growths of buds from the sides of the villi are much less numerous than in the earlier months. Fewer plasmodial masses are seen in the intervillous space.

The attached ends of most of the villi have an appearance very different from that found early in pregnancy. The proliferated mass of the *Zellschicht* has greatly diminished. In some cases the cells have entirely disappeared, the connective tissue of the villi being in direct contact with that of the decidua. Where the latter in some parts is undergoing fibrinous degeneration this process may extend also to the tissue of the villus. Here and there some cells of the proliferated *Zellschicht* are found; their matrix stains faintly and appears hyaline, their nuclei being more or less degenerated.

End of Pregnancy.

The connective tissue of the chorionic membrane is very dense, in some parts having a sclerosed appearance. There is a relatively large quantity of the matrix in proportion to the cells. Many cells are shriveled and lie in spaces. In many of the vessels great thickening of the intima is found.

The epithelium in many parts is entirely absent, the connective tissue being in direct contact with the maternal blood of the intervillous space. In other parts it consists of a single row of cells belonging either to the superficial or deep layer. The nuclei are flattened parallel to the surface. Where the epithelium is very thin it greatly resembles an endothelium. Where two or more thicknesses of cells are found it generally shows a tendency to split. In various parts a thick, deeply-staining fibrin-layer occupies the place of the epithelium. Embedded in this are sometimes found one or more villi massed together. These included villi lose their covering epithelium, their connective tissue gets very dense, and their vessels become obliterated. Under the fibrin no cells of the epithelium can be found in many parts, but elsewhere they are found in varying numbers. The fibrin varies in appearance. It may be dense and fibrillated or it may have a loose reticulated structure as if it

were being broken up. Through it epithelial cells in different stages of degeneration may be seen.

The villi are relatively more attenuated than at earlier periods. In the larger ones the connective tissue is mainly dense. In some this appearance may be uniform; in others irregularly distributed, being especially marked around the vessels. The dense tissue sometimes appears smooth and homogeneous on section; this is due to the close packing of fibrils. In the small villi the connective tissue is for the most part loose and mucoid.

Many of the vessels are diminished in calibre, owing to thickening of the intima; this is especially so in the case of the large villus-stems. The vessel wall may occasionally be found to be in a condition of hyaline degeneration. The endothelium is swollen in some parts and proliferated in others.

The epithelium covering the villi has changed considerably from the condition in which it is found in early pregnancy. In most cases it consists of a layer of thin protoplasm with low cubical or flattened nuclei. It is evidently the remains of the outer plasmodial layer of the epithelium, for no cell-outlines are recognizable as a rule. The nuclei may be close together or at varying distances apart; they are finely granular and stain very deeply. At intervals the plasmodium is thickened. In many parts it is degenerated and is split up. Sometimes a considerable length may appear split off as a layer. This has been wrongly described by Jassensky and others as a special covering. Here and there the connective tissue core of the villus is quite bared. Very few buds of epithelium are seen, and in the blood of the intervillous space, very few detached bits of plasmodium are found. In all the villi very few cells of the deep layer or *Zellschicht* are visible; they are separated by considerable intervals.

The villi differ in appearance according to the state of their vessels. When containing little blood their outer contour is generally irregular and crumpled. When congested it is more uniform and regular.

In most of the villi attached to the decidua the proliferated cells of the deep layer at the villus-end have disappeared, so that the connective tissue of the villus is in direct contact with the decidual tissue. Where the latter is in a condition of hyaline degeneration, the line of demarcation may readily be made out. Where the de-

generation has spread to the villus or where no degeneration exists in either, it is very difficult to distinguish foetal from maternal tissue.

Owing to the thinness of the serotina in parts the attached villi may be very close to the muscular part of the wall. Occasionally the decidua is entirely absent and the villi touch the muscle.

Non-Placental Part of Chorion.

In the early specimens, *e. g.*, Merttens', no distinction can be established between chorion frondosum and chorion laeve either in regard to number, size, shape of villi, or of minute structure. The description already given of the early placental portion will, therefore, serve for that of the non-placental portion.

The first change by which a distinction can be established probably begins before the end of the first month of gestation. It is the growth of villi relatively greater in relation to the serotina than in relation to the reflexa.

As regards the minute structure at this time there is nothing special to be noted. The epiblast, mesoblast, and the relationship between foetal and maternal parts are the same as in the placental portion of the chorion.

Sixth Week.

The chorionic membrane is the same as in the placental part. Near the serotina villi are numerous so that a narrow intervillous space exists here between the reflexa and the chorion. This space varies in size in different cases. Further out from the serotina the chorionic membrane is in closer relation to the reflexa, being either in contact with it or separated by the scanty villi compressed between them.

The villi vary considerably. Near the serotina they are most like those of the chorion frondosum and they are attached in the same manner to the decidua. Farther out from the serotina the villi are simple, less branched and possessing very few buds on them. They have no marked growth-tendency. Most of them are poorly vascularized. Some contain no capillaries.

In many the connective tissue has a swollen or hyaline appearance.

Some are attached to the reflexa by a slight epithelial proliferation. In others this cannot be found. By this time, as has already been pointed out, the reflexa shows considerable hyaline or fibrinous degeneration. Here and there a villus is embedded in a depression of the reflexa; its epithelium degenerates and disappears and its connective tissue gets hyaline and swollen.

Fourth Month.

By this time the chorionic membrane has come into contact with a considerable portion of the decidua vera owing to the disappearance of the reflexa in different parts. Here and there they have become blended, but for the most part they lie merely in apposition. When union takes place the epithelium proliferates, forming a well-defined layer. This seems to be mainly an increase in the *Zellschicht*. The matrix stains lightly, the nuclei deeply. Cell-outlines can be made out in many parts. The line of attachment varies; it may be pretty regular, slightly uneven, or it may be very irregular, following the elevations and depressions of the decidual surface. Here and there a degenerated villus is found compressed between the chorion and decidua.

Sixth Month.

The chorionic membrane is almost everywhere adherent to the decidua. The chorionic connective tissue is fibrillated, the nuclei being elongated and lying parallel to the surface. The epithelium which forms the means of attachment is a well-marked layer varying in thickness, but on the average, thinner than it was at the fourth month; it is rare to find more than two rows of nuclei. A few villi may be found compressed between chorion and decidua. Their connective tissue has a dense swollen appearance as if undergoing hyaline degeneration; no vessels are visible in them.

Full Time.

The chorionic connective tissue appears much the same as at the sixth month, though it is generally denser. The line of attachment to the decidua is very similar. The epithelium is thickest close to the placenta, where from three to nine rows of nuclei may be

found in parts. The nuclei are in general round or oval, but they are also found irregular in outline, often lying in a space in the matrix. The latter stains faintly, has a finely granular structure and is vacuolated and broken up in parts.

Away from the placenta the epithelial layer is thin and presents various appearances of degeneration. Here and there, especially near the placenta, degenerated remains of villi are found, compressed between chorion and decidua.

(To be continued.)

DIFFERENTIAL DIAGNOSIS OF OVARIAN CYSTOMA.

By JOHN H. RISHMILLER, M.D., MINNEAPOLIS.

I wish to present to you the characteristic differential diagnostic points between ovarian cyst and some of the more important maladies which simulate this neoplastic growth in its various phases of development, and which frequently baffle the busy practitioner in arriving at a positive diagnosis. For convenience sake we have adopted Olshausen's division of all tumors into three classes: 1. Those which are distinctly intra-pelvic. 2. Those which occupy the lower part of the abdomen. 3. Those which extend to the epigastric region.

Let us consider the following pelvic neoplasms in differentiation from ovarian cystoma:

- (a) Retroflexion or retroversion of the gravid uterus.
- (b) Extra-uterine gestation.
- (c) Collections of blood (pelvic hæmatocele).
- (d) Distended tube (hæmato-pyo- and hydro-salpinx).
- (e) Collections of pus (pelvic abscess).

(a) Retroflexion or Retroversion of the Gravid Uterus.

It is hardly imaginable that even the incautious examiner could be culpable of such an egregious blunder as to overlook the history and symptoms of gestation. But if the incarcerated organ does not clearly present the globular and fluctuating swelling we should by all means examine the patient under an anæsthetic. Then a biman-

ual examination will reveal without a doubt the absence of the fundus in the usual position and the relation of the cervix to the tumor. The most reliable sign of early pregnancy is the softening of the uterine body above the utero-sacral ligaments.

(b) *Extra-Uterine Gestation.*

The patient will furnish a history that she has been married a number of years and has not become pregnant or that she has become pregnant and then gone an indefinite time before its recurrence. The clinical data in ectopic foetation are altogether matters of uncertainty and irregularity. The absence of the signs and symptoms of pregnancy are the main points in casting aside the suspicion of an extra-uterine gestation. The catamenia may be suppressed or appears regularly for the first months and not afterward, and then again, at the beginning there may be amenorrhœa and a return in the later months. The periodic colicky pains usually present themselves after the second month, and consist of irregular paroxysms felt in the hypogastrium and in the region of the gestation sac. These symptoms of pain are usually associated with internal hæmorrhage and collapse. On bimanual palpation we find less fluctuation than in ovarian cyst. The uterus is smaller than at the corresponding periods of normal gestation with the fundus pushed upward and forward behind the symphysis, which position is brought about by the frequent development of the fruit sac in Douglas's pouch. The uterus will present a marked elongation. If a portion of its mucosa be removed by curettage and subjected to a microscopic examination, decidual changes will be observed. The expelling of a decidual cast is pathognomonic. In the early weeks the gestation tube may be felt as a rounded semi-fluctuating projection of one horn of the uterus, and as it enlarges, falls into Douglas's pouch. After rupture we find a boggy mass behind the uterus or in the broad ligament. I have a case of the latter description at present under care where rupture occurred at the end of the third month into the left broad ligament. The foetal débris and hæmatocele almost entirely stripped the peritonæum out of the left side of the pelvis and crowded the uterus toward the right. The later stages of ectopic gestation are easily differentiated from ovarian cyst by the simple appreciation of the normal signs of pregnancy.

(c) Collections of Blood.

It must be remembered that the first symptoms of a pelvic hæmatocele are very similar to those of rupture of an extra-uterine foetation, for, in my estimation, the latter is most frequently due to the former. We have the sudden appearance of excruciating pains due to the burrowing of the blood, accompanied by signs of shock, collapse and hæmorrhage. On bimanual examination we find at first the tumor exquisitely sensitive, soft and fluctuating, while the uterus is movable; later the sensitiveness disappears, and becomes hard and dense from the absorption of the fluid constituents, and the uterus is firmly anchored, as the sequela of one or more attacks of pelvic peritonitis. All these symptoms are absent in ovarian cyst and the tersest manner of arriving at a differential diagnosis is by critically studying the clinical history, for the reason that a chronic pelvic hæmatocele may present all the physical signs of an ovarian cystoma.

(d) Distended Tube.

For the reason that it is very difficult to differentiate between hydro-hæmato- and pyo-salpinx I wish to briefly reflect on these lesions conjointly as a distended tube in differentiation from the subject matter under discussion. In a distended tube we have a history of acute inflammation with a great deal of pain, while in ovarian cyst these signs are absent. On bimanual examination the hands can grasp a small pear-shaped body on the side of the uterus to which it is attached by a slender pedicle, while in ovarian cyst the tumor is more oval and less intimately connected with the uterus. The one is usually higher in the pelvis and less movable, while the other is lower and more movable. In a distended tube we have at intervals a discharge of fluid per vaginam. When an ovarian cyst is completely imbedded in an inflammatory exudate it is with the greatest perseverance and mental discipline that we arrive at an unhesitating diagnosis. Such a case has come to the writer's observation at St. Mary's Hospital, where operation proved the condition of the existing pathology.

(e) Collections of Pus.

Pelvic abscess has recently been so exhaustively studied by all who are interested in pelvic surgery, that I will pass this over by simply giving it this brief mention.

Adhering to Olshausen's classification of abdominal tumors we find in the second division, or those tumors which occupy the space between the pelvic brim and the umbilicus, a tympanitic note on percussion between their superior border and the lower ribs. Another fundamental division is whether the neoplasm grows from below upward, or from above downward. If downward we will have a tympanitic zone of resonance between their lower borders and the pelvic brim, and *vice versa*. A further subdivision may be carried in mind by observing whether the tumor originates from tissues or organs located in the lateral or median part of the abdomen.

In the consideration of abdominal tumors I wish to call your attention to the following:

- (a) Ascites.
- (b) Encysted ascitic fluid.
- (c) Tuberculosis of the peritonæum.
- (d) Gestation.
- (e) Fibroma of the uterus.
- (f) Fibro-cystoma of the uterus.
- (g) Distended bladder.
- (h) Phantom tumor.

(a) *Ascites*.

Ovarian cystoma is most frequently confounded with hydroperitonæum. In abdominal ascites the enlargement is uniform, flat in front, commences in the most dependent part and the dullness on percussion changes with the decubitus of the patient, while in ovarian cyst the enlargement begins unilaterally in the iliac fossa, grows obliquely upward, prominent in front, and is not changed by the position of the patient. In advanced development the ovarian cyst is centrally placed and gives a circumscribed dullness in front, while in ascites there is a marked bulging laterally, and gives a diffuse dullness in the flanks and a tympanitic percussion-note in the region of the umbilicus. In hydroperitonæum we have a prominent and thinned navel, floating ribs not bulging, bimanual recto-vaginal examination detects a distinct wave of fluctuation and a uterus of normal position, size and mobility, while in ovarian cystoma we have the conical chest from the bulging of the false ribs,

navel not thinned, fluctuation per vaginam less distinct or not recognizable and the uterus is apt either to be retroverted or drawn upward. The motion imparted to the cyst on deep inspiration is wanting in ascites. In the former we have the characteristic facial emaciation which presents such a graphic contrast to the full, leaden and puffy face of hydroperitonæum. In ascites we have a tense and shining skin, with enlargement of the superficial abdominal veins and oedema of the extremities and lower abdomen.

(b) *Encysted Ascitic Fluid.*

Is an extremely rare affection, and when encountered is generally mistaken for an ovarian cyst. We have a clinical history of slow growth and localized pain, with acute peritonitis. Its boundaries are usually ill-defined and restricted among the intestinal adhesions. The tumor is usually located in the middle and front of the abdomen with the intestines behind. A change in the decubitus of the patient does not present any variation in the percussion-note, which is dull in front and resonant in the flanks. Fluctuation is limited, and the abdomen is not nearly so prominent as in ovarian cystoma. Vaginal examination is negative.

(c) *Tuberculosis of the Peritonæum.*

Fully one-third of the reported cœliotomies in tuberculous peritonitis the diagnosis of ovarian cystoma has been made. The physical examination counts very little, but the most suggestive points are the clinical history and the evidence of old tuberculous lesions. The condition of the Fallopian tubes, the lungs and the pleura should be carefully examined and the detection of any diseased affection of these viscera, together with an ill-defined anomalous mass in the abdominal cavity should lead us to suspect its presence.

(d) *Gestation.*

Ovarian neoplasms commonly cause sterility, but do not actually exclude pregnancy. We should, therefore, abstain from using the sound, and await the conclusion of a future examination. In a month hence the ballottement, fetal heart and quickening will

give the necessary facts for making the distinction. Ovarian cystomata, in their early stages of development, occupy either side of the pelvis, and can hardly be mistaken for the median placed and pregnant uterus. But the history of ovariectomy shows that in advanced gestation, complicated by an ovarian cyst, the cystic growth has been overlooked, inasmuch as it was not even suspected. In hydramnios, if proper significance is not attached to the cardinal symptoms of pregnancy, may easily lead the surgeon to a mistaken diagnosis. I will briefly recall the symptoms of contrast between these two conditions. In ovarian cystoma we have the gradual and asymmetrical enlargement, while in pregnancy it is more rapid and symmetrical. In the one the features are emaciated and anxious, conical chest, menstruation present, superficial veins of the abdomen enlarged, œdema of the ankles in the late stages and fluctuation very distinct, while in the other the features are natural and healthy, chest not conical, menstruation absent, veins of the abdomen not enlarged, œdema of the ankles not uncommon after the seventh month and fluctuation not very prominent. In pregnancy, on bimanual palpation, contractions of the uterus may be excited, and apparent softening and shortening of the cervix may be detected. Pregnancy may be excluded by the detection of the normal-sized and unimpregnated uterus.

(e) *Fibroma of the Uterus.*

Small, pelvic tumors, with a hard, nodular and movable mass, intimately connected with the uterus, with symptoms of irregular discharges of bloody and watery fluids, should lead us to suspect a growth of a fibrous nature. Small pelvic fibromata are more difficult to diagnose than abdominal ones. A pedunculated fibroma is extremely difficult to differentiate from an ovarian cyst for the reason that the uterus is not enlarged and metrorrhagia usually absent. Fluctuation would be pathognomonic, but suppose we have an œdematous fibroma or a multilocular cyst with innumerable small areolar cavities, then nothing short of an anæsthetic will clear up the diagnosis. The fibroma develops very slowly and the ovarian cyst rapidly. In the one the abdomen is asymmetrical, menorrhagia or metrorrhagia frequent, surface lobulated, hard and firm, elasticity marked but no fluctuation detectable, the uterus moves

with the neoplasm, and the uterine cavity is elongated; in the other the abdomen is symmetrical, amenorrhea the rule, surface smooth and yielding, fluctuation unmistakable, uterus moves independently of the tumor, and its cavity is not elongated. In fibroid tumors the abdominal veins are not enlarged and the excretion of the kidneys is normal, while in ovarian cystomata the superficial veins are distinctly prominent, especially in the multilocular variety and noticeable inactivity of the kidneys. On the one hand, we have the healthy facial expression, on the other the characteristic *facies ovariana*. On bimanual examination in the case of fibroma we find an elastic and firm tumor coincident with a large and heavy uterus, while in the case of an ovarian cyst we can distinctly detect the independent mobility of the uterus and the fluctuation and compression of the cystoma.

(f) *Fibro-Cystoma of the Uterus*

Is relatively infrequent and occurs usually in women over thirty years of age. Their growth is slow at first but rapid after attaining a certain size. Menorrhagia is seldom present. In fibro-cystoma we have a lobulated condition which can be felt through the abdominal parietes, umbilicus not prominent, uterus moves with the tumor and the uterine cavity is generally elongated, while in ovarian cyst we have no lobulation except in polycysts, the umbilicus is prominent, the uterus moves independently of the tumor and its cavity is not elongated. The detection of hard nodules would be significant, but hard and tense cysts may impart the same sensation. Fluctuation is very hard to detect for the reason that the tumor gives rather an elastic feel. The writer saw a case of this description in consultation last winter where it was impossible to make a positive diagnosis. Operation revealed the true nature of a multilocular cyst with innumerable areolar cavities filled with fluid of different densities and constituents. Some of the cavities were so tensely filled with colloid matter that they gave the sensation on palpation of a nidus of soft fibroids with some of cystic degeneration. Fluctuation was not detectable, and the diagnosis was a disputed question until disclosed on the operating table. In pedunculated cystic fibroma the uterus moves independently of the tumor and its cavity is not enlarged.

(g) *Distended Bladder.*

It is hardly possible that a distended bladder could be mistaken for an ovarian tumor, but such errors have happened even to men of expert diagnostic skill. When the bladder is over-distended the urine usually dribbles away constantly or passes in spurts when the patient moves. Mistakes are most liable to happen where retention is due to the pressure of a pelvic neoplasm and in all critical examinations of the pelvic organs the inserting of an aseptic catheter is by no means superfluous.

(h) *Phantom Tumor*

Is a great rarity, but of late years more frequent than formerly. They are found among women who have uncontrollable imaginative faculties, such as the excessively nervous and hysterical. Percussion over the tumor will give a pneumatic resonance. An anæsthetic will relax the abdominal muscles and then the supposed neoplasm will entirely disappear and reveal the mystery.

In conclusion, the limitation of time forbids my considering the other twenty-five or so enlargements which may take place in the abdominal cavity and be mistaken for ovarian neoplasm, or *vice versa*.

PRACTICAL OBSTETRICS.

BY R. G. WOODWORTH, PUEBLO, COL.

A few suggestions as to my *modus operandi*, under the above caption, may not come amiss, but, on the contrary, be helpful to some of the *novices* in the profession, and not prove unwelcome even to those of broader experience by reason of the years of devotion to the subject.

One point I wish to emphasize is: bimanual pressure as against the use of the forceps in tedious labors. In a number of recent cases I have not failed to carry my forceps with me, not so much because I felt they were indispensable as the fact of the mental impression they produce. Not unusually a patient assumes a physician is broader-minded and more skilled if she sees a few instruments, and it also leads her to believe the doctor has fully equipped himself for every emergency in her particular case. Of course, the rule should be to use the forceps if other means fail. As between ergot and the forceps, I would choose the forceps, but as between the use of the forceps and bimanual pressure, I choose the bimanual pressure in the great majority of instances. There are two points which should be considered before thinking of employing the pressure. The first is, are the contractions sufficiently strong of themselves to expel the foetus? Secondly, is the tenderness of the womb so great as not to admit of pressure? Both of these questions can be decided upon a very casual and superficial examination. When the uterine pains, after dilatation of the cervix, become expulsive, I observe, from time to time, whether any progress is being made, and if so, well and good; but, after a given length of time, if the foetus fails to advance and seems apparently to be lodged, I do not hesitate to use the pressure. How is the pressure applied? I seat myself at the side of the patient with a good-sized pillow on the opposite side of the patient upon which to rest my elbow. The arm resting on the pillow, of course, is more or less fixed. The other arm, if it be the right (which is usually the case) can easily be aided by being pressed upon by the right knee. By this powerful means of applying bimanual pressure sufficient force can be brought to bear upon the womb during contraction as shall be immediately apparent in effecting the progress of delivery. It is plain that only sufficient

force should be employed as to accomplish the desired end, namely, slight progress. The pressure should be employed only during the contractions of the womb, and a weak and inefficient contraction, augmented by pressure, can be made to accomplish a mighty work in hastening delivery.

I said that a tender womb is a contra-indication to the application of this pressure. It is not necessarily so, for if it be remembered to use the pressure only during the height of the pain the patient seldom complains.

Much of the work in obstetrics in every part of the country is done by midwives, and to say the least, they know about as much about this important branch as swine do of roller skates. If Nature will do the work without their intermeddling, or, to speak more correctly, in spite of it, the patient is certainly fortunate, the midwife gets the praise, her egotism has gone up a notch, and she is prepared to assume greater risks in the future.

Only a short time ago I was called to assist a woman in delivery who had been in pains for three days with fever, thirst, restlessness and tenderness; the vagina was hot, the uterus exhausted, and the midwife and neighbors frightened. I first gave the woman ten grains of quinine, anointed the vagina, which was dry, with vaseline, and as soon as she began to feel the effects of the quinine I commenced the bimanual pressure. In about thirty minutes the child was born. The question might be asked why I did not give ergot to bring on the pains. The reason is that my experience with the use of this drug before the delivery of the placenta has not been very flattering. In many instances when the drug is used the uterus contracts down on the placenta and imprisons it so tightly as to require much labor and worry to accomplish its expulsion, and even then only at the risk of portions being left behind which necessitate judicious surveillance of the case for some time, with possibly the subsequent evils which occur under such circumstances.

Forceps, like drugs, are exceedingly dangerous except in skillful hands. Bimanual pressure is efficient and free from harm, and the mere novice can employ it with results as gratifying to himself as they have been to me, and at the same time not subject himself to the contempt of the family, which is pretty apt to show itself consequent upon the injury resulting from unskillful or improper manipulation of the forceps.

THE TREATMENT OF CIRCUMSCRIBED PELVIC HÆMORRHAGE.

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When fluid blood escapes into the normal pelvic cavity it cannot be palpated, because it forms no distinct resisting mass. The hæmorrhage is *free* and unlimited.

If the patient survive, the blood soon coagulates; the clots gravitate to the lowest part of the pelvis; the dependent intestinal loops are floated up above the clot, and all other pelvic viscera are displaced in the direction of least resistance. The unabsorbed blood serum, together with the lymph poured out by the surrounding peritoneal surfaces, covers the blood clot, fills the interstices between the intestinal coils, fills the gaps between the displaced viscera, and, becoming organized, constitutes a false membrane of varying thickness, which more or less effectually shuts off the blood mass from the rest of the peritoneal cavity. This blood mass, together with whatever débris may be enclosed within, can be readily palpated, both externally and internally. The longer the lapse of time between the hæmorrhage and the examination, the more distinctly palpable is the mass.

The mass can be palpated earlier when the hæmorrhage takes place between the layers of the broad ligament, or into a space formed by pre-existing adhesions, because the blood is surrounded by a limiting resistant wall.

Whenever the symptoms warrant a diagnosis of intra-pelvic hæmorrhage, and there is present a peculiarly resilient, immovable, fairly-defined mass, the case is one of *circumscribed* hæmorrhage.

Free hæmorrhage is always intra-peritoneal. Circumscribed hæmorrhage is practically extra-peritoneal because the false membrane, or the layers of the broad ligament shut off the mass from the rest of the peritoneal cavity.

* Read before the "Section on Obstetrics and Diseases of Women" of the American Medical Association at Philadelphia, June 2, 1897.

Rupture of the false membrane or broad ligament may convert a circumscribed into a free hæmorrhage. Both forms of hæmorrhage would then be present at the same time.

When seen a few days or weeks after its occurrence the most astute clinician cannot say whether a hæmorrhage was originally intra- or extra-peritoneal, whether hæmatocele or hæmatoma. But he can positively say that it is now a case of circumscribed hæmorrhage. The graduate fresh from the class-room will find no difficulty in distinguishing circumscribed hæmorrhage from free hæmorrhage, no matter what the pathology may be.

To avoid confusion and to cut loose from misleading terms, such as pelvic hæmatoma, pelvic hæmatocele, extra- and intra-peritonæal hæmatocele, the suggestion has been made and is now repeated, to distinguish but two forms of pelvic hæmorrhage in plain, unmistakable terms; namely *free* and *circumscribed* hæmorrhage.

Pelvic hæmorrhage may be due to injury, to rupture of diseased or dilated blood vessels, to reflux of menstrual blood, to rupture or perforation of a viscus, or of a tumor; but in most instances the cause is either tubal abortion, or ruptured ectopic pregnancy.

It is all but universally conceded that abdominal section for early removal of tubal gestation is safer and more rational than the use of electricity, or the injection of morphine.

No one to-day questions the propriety of opening the abdomen to check free hæmorrhage, if the symptoms warrant even the suspicion of such an accident.

But the cases which we are called upon to see early, whether before tubal rupture, or soon after hæmorrhage has set in, comprise but a small proportion—not more than one-fourth—of all cases of pelvic hæmorrhage. The bulk of these cases are seen days, often weeks after the initial symptoms. Many are not recognized, and many more are not brought to our notice because the symptoms had not been severe and recovery has taken place. They are seen by us as circumscribed pelvic hæmorrhage.

The encysted blood from ruptured vessels, or from tubal reflux, when not infected, nor in quantity too large for absorption, will disappear in a few weeks to a few months without detriment to the patient. The only treatment necessary is absolute rest.

The same is true in the majority of cases of circumscribed hæmorrhage due to ectopic gestation; not only the blood clot but

even the early product of conception (two to three months) is capable of absorption.

Not more than forty per cent. of cases of circumscribed hæmorrhage due to ectopic gestation require active surgical interference.

I have seen in my own practice forty-six typical cases of hæmorrhage due to extra-uterine pregnancy. Of these eleven were of the free variety requiring emergency operations, and thirty-five were cases of circumscribed hæmorrhage. Of the latter variety twenty-three have been previously tabulated,* and the remaining twelve are herewith submitted in similar form.

When called to a case of this kind, unless there is a distinct indication for immediate operation, I order absolute rest under reliable supervision—so-called *vigilant delay*. This close supervision must be in the hospital whenever practicable, or at the home of the patient, in charge of a competent attendant. While this precaution for the safety of the patient has been insisted on in every instance, I have not in a single case of the thirty-five so treated, been flurried, or compelled to do an emergency operation. When an indication arose forbidding further delay, there was always ample time for deliberate action.

Two cases are submitted in detail to bear out these statements.

Dr. D. S. Hanson requested me to see Mrs. A. S. on February 22, 1895. She was thirty years old, had been married six years, and had had three children. The last was one year old and still at the breast. The mother's previous health had been excellent. She had menstruated for the first time since the birth of the child on January 15, the flow being scant and lasting only two days. Two weeks later (three weeks ago) she began flowing, and has continued since. There have been no clots, but shreds of membrane. Has had three attacks of sharp pain within the past week, resembling the attack of to-day, though not so severe. While sitting, holding the baby on her lap, she was taken suddenly with a severe chilly sensation, accompanied by intense, agonizing pain in the abdomen, and became faint. She was carried to bed. Dr. H. found her looking blanched, as if internally bleeding, with small pulse, impressing him as if she was a very sick woman. At the hour of consultation the patient had rallied. Her pulse was 96, her temperature 100°. The

*Transactions of the American Association Obstetricians and Gynæcologists, 1893 and 1894. Vol. VI and VII.

pain had been relieved by morphine. A large globular, elastic, somewhat tender mass filled the right side of the pelvis and the Douglas cul-de-sac. The cervix was pushed forward against the symphysis. The abdomen was slightly distended, but not tender. Her pendulous, fat abdominal wall made me shrink from attempting immediate operation. Supervision was advised. Though prepared to hear from the patient at any time, I did not see her again until April 8, six weeks later. Dr. H. reports that during this interval she had had an occasional rise of temperature (not over 100°); that the flowing had stopped for a week, to return again, first a dark blood with clots and shreds and since April 4 a red fluid blood. After the first week of her sickness he had seen her at intervals of a few days, now he saw her for the first time in a week. Her temperature is normal; pulse 100. She has no pain, good appetite and sleep. Would like to get up. The cervix is still slightly forward, though easily reached. The enlarged uterus is plainly outlined against the globular tumor in the cul-de-sac. The tumor is of the size of a small cocoanut. There is now no tumor in the right side, but a slight tenderness. After two weeks she was allowed to get up, and has enjoyed excellent health since.

I saw the second case July 5, 1896, at the request of Dr. A. J. Cook, who had correctly diagnosed it before sending for me. The woman was twenty-six years old, had been married five years, had had two children, the last three years ago. Menstruation had been regular until May 1, since which time there had been no flow, excepting a few drops three days ago. She thought herself pregnant, though she did not feel the usual nausea. She had felt quite well until twelve days ago, when she had some colicky pains. These continued until a week ago, when she was taken suddenly with violent pains in the right side of the abdomen and with nausea. She had to go to bed at once, but got up the next day and the following days, being compelled, however, to lie down daily on account of weakness. This afternoon (July 5) she was again seized with pain similar to that of a week ago, but worse. She also had some rectal tenesmus. Though under morphine when seen by me, she was suffering sharp pain in the hypogastrium. Her lips and conjunctivæ were pale. Her pulse was 88; temperature, 100°. The hypogastrium, especially the right, was quite tender. The cervix was large, and was pushed forward by a mass lying at the right of

and behind the uterus. On account of the tenderness of the abdomen the mass could not be well outlined. Her pulse being good, I did not deem immediate interference necessary, but had her removed to the hospital for careful watching. By July 11 she was free from pain, had a pulse of 74 and a normal temperature. The mass to the right could now be well defined, filling that side of the pelvis. July 14 she was again taken with sharp, peritonitic pain through the right abdomen, and there was increased tenderness behind the uterus. Pulse, 108; temperature, 100.2°. She was now closely watched, anticipating necessity for operation. July 15 her pulse was 88; temperature, 100°; she felt easy. July 16, though the temperature was lower, being 99.8°, her pulse had been rising since midnight, being 108 in the morning. There had at no time been any tympanites or vomiting. To my mind the rising pulse indicated active hæmorrhage. Operation was now decided on.

Operation: Present Drs. Cook, Dutton, Barnes and Skeel. Chloroform. Incision four inches. Abdomen full of free and clotted blood. The tumor consisted of the enlarged ruptured right tube, enlarged ovary and the greater upper portion of the right broad ligament. These were ligated with catgut, chain stitch. Behind and below the uterus was a mass of loose, coagulated blood. After this had been scooped out another mass was found filling the cavity of the recto-vaginal pouch. This was separated from the layer of loose blood above by a thin spider-web membrane, which had to be broken up before the lower layer of blood could be removed. The abdomen was flushed with sterilized water and a glass drain introduced. No foetus. The rupture, with ovum and placental tissue, was in the outer end of the tube. Excepting abscess from constricted suture, her recovery was uneventful.

Of the twelve cases included in this report, five recovered by rest, one left the hospital before full recovery, one took only snatches of rest, and five were operated for cause: two for growth of tumor; one for recurrent hæmorrhage, one for sepsis, and one for foetus beyond term. All recovered.

Following the plan of vigilant delay, I have succeeded in restoring to perfect health, without operation, eighteen women out of thirty-five, not one of whom has been left an invalid. All consider themselves as well as they ever were, and attend to their households as well as previous to their sickness. Of the remainder one refused

operation, one left the hospital before recovery and fifteen were operated on, with four deaths. Three of the deaths were due to far advanced sepsis previous to operation in cases not recognized by the attendants. Eliminating the three hopeless cases, there would remain a mortality of one in twelve. If the eighteen women who have recovered, had been submitted to operation, according to my results, at least one would have died; one or more would have had a ventral hernia, and nearly all ventral scars.

In the papers above referred to and in discussions elsewhere published* I have given my reasons for the faith that is in me. It would unnecessarily prolong this résumé to repeat them. The technic of some of the operations,† and the choice of the abdominal or vaginal route‡ have also been considered on previous occasions. My experience with cases of circumscribed pelvic hæmorrhage leads to the following conclusions:

1. That, unless they require immediate operation for cause when first seen, they can be submitted to careful supervision in hospital or home without danger.

2. That, when thus watched, more than one-half will get well without operation by keeping them at absolute rest for an average period of six to eight weeks.

3. That, when they cannot be watched, or refuse to rest, early operation is to be urgently recommended.

4. That operation is necessary only for special indications, of which the most important are sepsis with or without suppuration, recurrent hæmorrhage, growth of tumor, non-absorption after reasonable time, and compression of the pelvic viscera (rectum or ureters).

5. Abdominal section is to be preferred to vaginal incision in most cases.

* Transactions of the Ohio State Medical Society, '93 and '96.

† "A contribution to the Technique of Intra-ligamentary Operations." *Annals of Gynæcology*, March '91.

‡ "Comparative Merits of Abdominal Section and Vaginal Incision in Extra-peritoneal Hematocele." *Annals of Gynæcology*, Sept. '89.

CASES OF CIRCUMSCRIBED PELVIC HÆMORRHAGE.

No.	Medical Attendant.	Age.	No. of Children.	Last Child.	Disease Continued From	Disturbance of Menstrua- tion.	Size of Tu- mor.	Indication for Operation.	Operation.	Duration of Disease.	Result.	Elsewhere Reported.	Remarks.
1	M. R.	37	4	5 yrs.	Nov. 16, '94, to Feb. 15, '95.	Missed two peri- ods. Attack sudden with collapse after having flowed five weeks.	From iliac fossa to liv- er.	Sepsis.	Dec. 22, '94.	Previous Recov- toopera- tion, 5 weeks.	Recovery.	Transact. Amer. Assoc. Obstet- ric and Gynecol. '95, Vol. VIII.	Late operation re- sulting from mis- taken diagnosis. Convalescence from sepsis two months after op- eration. No fetus found. Health good. No trace of disease except scar and pleuritic adhesions.
2	Dr. D. S. 30 Hanson, Cleve- land.		3	1 year nurs- ing.	Feb'y 15, '95, to April 22, '95.	Last menses 5 weeks ago. pelvis and Flowed past 3 pouch ex- weeks. Attack tending to sudden. Flow 3 inches continued 6 above pel- weeks after vic brim. attack.	Filling right	None.	....	9 weeks.	Recov- ery.	See first case in present article.	Seen a week ago. Enjoying excel- lent health.
3	Dr. F. W. 25 Herb- kersman, Cleve- land.		None.	....	June 23, '95, to Aug. 24, '95.	Missed one pe- riod. One month later seized with sharp, cramp- like pains and	Within 2½ inches of umbilicus.	Recurrent Hæmorr- hage.	July 27, '95.	Previous Recov- toopera- tion, 5 weeks.	Recovery.	....	First seen by me July 10, '95. Sent to hospital for observation. Pain, increase of tumor, and rise of

CASES OF CIRCUMSCRIBED PELVIC HÆMORRHAGE. CONTINUED.

No.	Medical Attendant.	Age.	No. of Children.	Last Child.	Disease Continued From	Disturbance of Menstruation.	Size of Tumor.	Indication for Operation.	Operation.	Duration of Disease.	Result.	Where Reported.	Remarks.
1	Dr. B. E. Sager, Cleveland.	37	1	16 yrs.	July 1905. Oct. 1905.	17, Menses stopped to suddenly having lasted 11 days, usually 6 days. Two days later sudden agonizing pain, collapse, flowing 5 weeks.	fainted. Two weeks later, similar attack. Flowing since first attack.						pulse from 76 to 104 after rest of 5 days, lead to operation. No fecus found. Only blood clot and ovarian hematoma. Left hospital Aug. 24th. Well since.
										10 weeks. Recovery.			First seen by me Sept. 8, '05. Case complicated by fibroid, size of small cocoanut, in right pelvis. Elastic tumor bulging out Douglas' pouch in left. March 4, '06, examination shows oval tumor in right broad ligament size of cocoanut, not tender. Patient quite well.

CASES OF CIRCUMSCRIBED PELVIC HÆMORRHAGE.—CONTINUED.

No	Medical Attendant.	Age.	No. of Children.	Last Child.	Disease Continued From	Disturbance of Menstru- ation.	Size of Tu- mor.	Indication for Operation.	Operation.	Duration of Disease.	Result.	Elsewhere Reported.	Remarks.
5	Dr. D. S. 32 Hanson, Cleve- land.		3	3 yrs.	April 25, '95. Ab- solute from time rest from menses, and tenderness of abdomen. May 19 to June 24.	Repeated at- tacks of pain from time of menstruation. Then sudden violent pain with formation of tumor in pelvis pushing uterus forward.	at-Size of 3 months pregnancy.	None.	....	5 weeks' Rest.	Recovery.	....	First seen by me May 19th, and or- dered absolute rest. Recovered without a bad symptom. "Uter- us is now as mov- able as that of a virgin."
6	Dr. J. M. 30 Friend, Cleve- land.		2	3 yrs.	June 7, '95 Last men- struation only one day, then con- tinued flowing a month with pain in left side. Seen June 28th. No col- lapse.	First size of Growth of July 1, 1895. First, later in- creased to double.	First size of Growth of July 1, 1895. First, later in- creased to double.	Previous Recov- ery.	....	....	....	....	Seen by me in con- sultation. Had no strict rest. Tumor increasing. Dr. F. operated assisted by me. No fetus. Re- covery complete. Had baby 11 months later.

CASES OF CIRCUMSCRIBED PELVIC HÆMORRHAGE.—CONTINUED.

No.	Medical Attendant.	Age.	No. of Children	Last Child.	Disease Continued From	Disturbance of Menstruation.	Size of Tumor.	Indication for Operation.	Operation.	Duration of Disease.	Result.	Elsewhere Reported.	Remarks.
7	Dr. A. Pay, Cleveland.	30	3	1 yr.	Latter part of January '96 to middle of March '96.	Taken at time of menstruation with intense pain and found in collapse on kitchen floor. Flowed for several weeks.	Reaching near umbilicus.	None.	....	2 months.	Recovery.	....	Seen by me February 20, '96. Large, somewhat tender, elastic tumor, bulging in vagina and rising above symphysis. Said to have been much larger. No fever. Absolute rest. Feels perfectly well.
8	Dr. R. E. Skeel, Cleveland.	28	5	2 yrs.	March 15, '96, but absolute rest from June 13 to July 16.	Menses due March 15. Came with gush and labor-like pains. Continued 2 weeks. Second attack with sharp pains in April. May 17. third attack and flowing since. No collapse.	Cocoon in right pelvis.	None.	....	4 weeks in hospital.	Recovery.	....	Uterus pushed to left by boggy mass in right pelvis size of cocoon. Operation advised when first seen in hospital, June 13. Operation declined. Rest ordered. Recovery complete. No trace of tumor.

CASES OF CIRCUMSCRIBED PELVIC HÆMORRHAGE.—CONTINUED.

No.	Medical Attendant.	Age.	No. of Children.	Last Child.	Disease Continued From	Disturbance of Menstru- ation.	Size of Tu- mor.	Indication for Operation.	Operation.	Duration of Disease	Result.	Elsewhere Reported.	Remarks.
9	M. R.	30	2	1½ yrs.	June 13, '96 to July 11, '96 when she left the hos- pital.	Flowing 1 week to when seen. Labor-like pains past 2 weeks.	Reaching midway be- tween um- bilicus and symphysis.	None.	....	1 month when she left the hos- pital.	Improv- ed.	....	Seen by me June 27th at hospital. Slavonic nation- ality. Information meagre. Pulse 108, temperature 99.7°. Cervix pressed against symphysis by soft mass bulg- ing into vagina and extending be- yond fundus above, on left side. Patient very anæmic. Could not be held at hospital, as soon as she felt better.
10	Dr. A. J. 26 Cook, Cleve- land.	33	2	3 yrs.	June 23, '96 to August, '96.	Missed two per- iods. Taken suddenly with violent pains in right abdomen. More violent attack 1 week later, and again nine days later.	Filling right side of pel- vis and cul- de-sac.	Recurrent hæmor- rhage.	July 16, 1896.	Previous attack about 2 weeks.	Recov- ery.	See sec- ond case in pres- ent arti- cle.	

CASES OF CIRCUMSCRIBED PELVIC HÆMORRHAGE.—CONTINUED.

No.	Medical Attendant.	Age	No. of Children.	Last Child.	Disease Continued From	Disturbance of Menstruation.	Size of Tumor.	Indication for Operation.	Operation.	Duration of Disease.	Result.	Disseminated.	Remarks.
11	M. R.	33	3	4 yrs.	November 15, 1896 to March 20, 97.	One week over time. Intermit- tent flow 2 weeks at a time. Severe bearing down pain.	Size of orange in left pelvis.	None.	.....	4 months.	Recovery.	.....	Came to dispensary. Would not go to hospital, not even to bed. When last seen uterus was movable. Mass only size of walnut. Appendages could be outlined.
12	Dr. G. R. Feil, Cleveland.	33	2	5 yrs.	June 23, 1895 to February 22, 1897.	Missed two periods. Sudden violent pain. Syncope. Peritonitis.	Size of 8 months pregnancy.	Peritonitis after missed labor.	February 22, 1897.	Previous Recovery 18 months.	Recovery.	Transac- tions of the Ohio State Medical Society, 1897.	Character of case not recognized at time of rupture. Went 3 weeks beyond term. Fetus died after spurious labor. Reported in full.

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INTRACRANIAL SEQUELÆ OF NEGLECTED MIDDLE-EAR SUPPURATION IN CHILDREN.*

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During the past few years the attention of the medical profession has been prominently called to the importance of inflammatory processes within the middle ear, occurring in early life. Fifteen or twenty years ago every well-regulated child was expected to have a discharge from the ear at some period of its life. The attending physician not infrequently assured the parents that the symptom was of no significance, and that any effort to stop the discharge, might be followed by serious results.

At the present time every physician, I think, recognizes the grave danger of a neglected aural suppuration in childhood. A glance at the specimens, which I take the liberty of exhibiting to you, will show at once how close an anatomical relation exists between the tympanic and cranial cavities. The floor of the middle cranial fossa is separated from the tympanic vault by an exceedingly thin bony septum, and it is surprising that intracranial complications are not more frequently met with in suppurative otitis media in these young patients. We should also remember that the tympanic roof may be incomplete, and that the meninges may actually dip down through dehiscences in the bony septum. In infancy firm union does not exist between the petro-mastoid and squamous portions of the temporal bone, the connection being fibro-cartilaginous, and ossification taking place only at a considerable time after birth. With a consideration of these facts, I think that no apology is necessary for bringing this subject to your attention.

At birth the mastoid portion of the temporal bone is exceedingly small, containing but a single cell, the mastoid antrum,

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which communicates directly with the tympanic vault. The vault, however, and the ossicles are nearly as large as in the adult, a fact which is also demonstrated by the specimens.

The intracranial complications which may follow a middle-ear suppuration are, first, a sinus thrombosis, affecting usually the lateral sinus; second, an epidural abscess; third, a diffuse meningitis, and fourth, a cerebral abscess. Of these various conditions, epidural abscess—that is, a collection of pus between the meninges and the inner table of the skull—is by far the least serious. It represents an effort on the part of Nature to localize an infection, and to prevent its extension to the general cranial cavity. The condition is by no means rare, and I have come to look upon it as scarcely rendering the prognosis more grave. A general meningitis is, by common consent, considered the most serious complication. The mortality would probably not be as high in these cases could we recognize the presence of the condition in the early stage. Unfortunately, however, a simple inflammation of the middle ear may cause marked cerebral symptoms, without actual involvement of the meninges, and, for this reason, the surgeon is apt to delay any radical measures directed toward the cranial cavity until the symptoms have lasted for from thirty-six to forty-eight hours, when it is usually too late to stay the progress of the inflammation.

An abscess in the cerebral substance, while uncommon in childhood, is occasionally found. The difficulties in diagnosis are greatly enhanced on account of the age of the patients, and, consequently abscess of the brain is looked upon as a condition of greater gravity in infancy than in adult life. Thrombosis of the lateral sinus is ordinarily attended by characteristic symptoms, and can usually be recognized sufficiently early to permit of its relief by surgical interference.

I have spoken of the involvement of the cranial cavity through the middle ear itself. Every one whose practice has thrown him in contact with a large number of diseases of childhood, has frequently seen what is known as a “post-aural” abscess; that is, a fluctuating swelling lying immediately behind and over the mastoid process, crowding the auricle forward and downward. The treatment has usually consisted in the incision of this abscess, the fact that the pus has ruptured through the mastoid cortex being considered a safeguard against involvement of the intracranial structures.

From my own experience in this line, I cannot speak too strongly against this belief. No matter how young the patient is, every vestige of diseased bone must be removed, and no practitioner should feel that he has done his duty when he has simply evacuated the superficial abscess.

Two cases, one of which was fatal, will, I think, make this point perfectly clear. A child ten months old was brought to my clinic with a fluctuating swelling behind one ear. The mother stated that this tumefaction had been present for about three weeks, and that for about the same length of time a purulent discharge from the ear had been noticed. The abscess was evacuated by free incision and a large quantity of pus escaped. A probe introduced into the wound showed that the underlying bone was exposed and roughened. The operation was performed without general anæsthesia, and no attempt being made to find a sinus leading into the mastoid process. The wound was packed with iodoform gauze, and the usual dressing applied. The wound was dressed daily by the nurse. At my next examination I found that the drainage was perfectly free, and that the irrigating fluid passed freely from the opening behind the ear out through the external auditory meatus, thus demonstrating the communication between the external wound and the tympanic cavity. The discharge from the ear lessened considerably, and the wound began to close by healthy granulation. In the course of a few weeks the incision had nearly healed, although the communication with the tympanum was still maintained, as shown by the return of the irrigating fluid through the meatus. There was some exuberant granulation tissue about the mouth of the sinus, indicative of the presence of dead bone beneath. As the child was doing so well, I foolishly hesitated about doing any operation at that time for the removal of this bone. Owing to the difficulty in bringing the child to the hospital during the winter months the dressing of the case was entrusted to the mother, the infant being brought only about once a week for inspection. The discharge became so slight that the opening would frequently be closed by inspissated discharge. The removal of this crust was always followed by the escape of considerable thick pus. For this reason, I determined to operate under a general anæsthetic, and remove the dead bone. The incision was made in the ordinary manner, and followed about the line of my former incision. Separating the edges of the

wound, and examining with the probe, the instrument entered an opening in the bone for a distance of about two and a half inches without encountering any resistance. Free hæmorrhage followed the introduction of the probe, the blood being exceedingly dark in color. The respirations at this time were very shallow, and recognizing at once that the probe must have entered the cranial cavity, I immediately applied a dressing, and abstained from further operative interference. The serious nature of the case was imparted to the parents, and close questioning elicited the facts that a few days previously, during an interval in which I had not seen the child, the tumefaction behind the ear reappeared, that the child had been drowsy, and when wakened was very irritable. On the day preceding the operation the mother had removed the dressing, and upon taking away a crust which had formed over the opening, a large amount of pus escaped. The escape of the pus seemed to relieve the child greatly, and the parents had not thought it necessary to inform me of these facts before the operation. The next morning the child's condition was much improved. A day later, however, marked cerebral symptoms developed, and the case terminated fatally. No autopsy was permitted, but the cause of death was undoubtedly meningitis. In this case, the intracranial infection was due to the separation of the periosteum from the outer surface of the temporal bone. The bone, thus deprived of its blood supply, became carious, and infection of the meninges occurred from without inward. The point which I wish to impress in this connection is that, no matter how freely a post-aural abscess is opened, and no matter how competent drainage seems, that there is always danger of infection of the intracranial structures from without inward, as long as any carious bone is left, and as long as there is any possibility of pus burrowing beneath the periosteum, and dissecting this up from the outer surface of the skull. This is particularly true in young children, in whom, as I have said before, the various parts of the temporal bone have not undergone osseous union. If the region of the petro-squamous suture is kept continually bathed in pus intracranial infection is exceedingly liable to follow.

A second case of this nature, in which, however, the termination was favorable, occurred a few weeks ago. The patient, about four years of age, was admitted to the hospital, with a post-aural abscess which had ruptured spontaneously. The introduction of the probe

revealed an extensive area of exposed bone. The ear had been discharging for about three months, and when the post-aural swelling appeared, the surgeon told the mother to poultice the ear until the swelling broke, and that then it would get well. As near as could be ascertained, the abscess had ruptured about three weeks before I saw the patient. There were no cerebral symptoms. The temperature was but slightly elevated, and there was no reason to suspect any involvement of the intracranial structures. Under ether anæsthesia, I made a free incision from the tip of the mastoid to just above the attachment of the auricle, and upon pulling the anterior flap forward, found a sinus leading into the mastoid antrum. Below and behind this sinus the bone was exceedingly soft, and upon removing the necrotic tissue with a curette, I found that the dura was exposed and bathed in pus over an area the size of a ten-cent piece. With the Rongeur forceps this opening was enlarged until it was everywhere bounded by healthy bone. The dura was then covered with a piece of iodoform gauze, and the upper sinus enlarged. A large amount of granulation tissue and soft bone was removed from the antrum, the destruction being so complete that a curette of large size could be carried from the mastoid opening directly into the tympanic vault. Owing to the extensive loss of bone I decided to extend the operation and to remove the posterior and upper wall of the canal, and to take away the carious ossicles; in fact, to do a Stacke-Schwartz operation. This procedure was exceedingly simple, and was accomplished in a few moments. The upper bony cavity was then firmly packed with iodoform gauze, and I next turned my attention to the region where the dura had been exposed. The lateral sinus lay close to the anterior boundary of the opening. A little more bone was removed in front so as to expose the vessel more completely. It was much reduced in size, and upon puncture with an exploring needle no blood was withdrawn. I then made a free incision through the outer wall of the sinus in order to determine whether the occlusion was caused by a recent septic thrombosis or by a previous inflammation resulting in the formation of an organized aseptic thrombus. The curette was introduced into the sinus, first upward toward the torcular and then downward toward the bulb, but the clot was found to be so firm that its removal did not seem to be called for.

I was extremely careful not to break up any adhesions which

had formed between the dura and the bone, as such a procedure might have been followed by a general purulent meningitis. The opening was enlarged, however, until the normal dura was visible. The usual dressings were then applied and the child returned to the ward. The subsequent history of the case has been uneventful.

I recall another case, that of a child two months old, which came under observation at my clinic, with a history of a suppurative otitis media of two weeks' duration. A few days after the first aural symptoms appeared the parts behind the ear became swollen. On examination, this tumor was found to be soft and fluctuating. Under chloroform anæsthesia, the ordinary incision was made, and the superficial necrotic tissue removed with a curette. The underlying bone was carious, just above and behind the line of auricular attachment; in other words, at a point above the level of the antrum. On cautiously introducing a probe, the instrument passed for a depth of about two inches without meeting any resistance. On manipulation, it was found that the probe passed along a bony shelf, and that when pressed upward it encountered no firm resistance. In other words, the probe had entered the cranial cavity, and had passed along the roof of the petrous pyramid. This opening into the cranial cavity was immediately enlarged by the Rongeur forceps. The exposed dura seemed to be firm and of a normal color. The child bore the chloroform badly, and it was necessary to operate with great rapidity. I, therefore, detached the fibrous meatus from the external surface of the temporal bone, until the posterior tympanic spine could be felt. With a chisel I readily entered the antrum just above and behind this point. The openings into the cranial cavity and that into the mastoid antrum were dressed separately, so as to prevent intracranial infection through any discharge from the tympanum. The child was almost moribund when taken from the table, but revived under stimulation, and on the following day appeared perfectly comfortable. It was bright, took nourishment readily, and in sufficient quantity, and presented no unfavorable symptom aside from a rather high temperature, the rectal temperature ranging from 102° to 104° . Considering the extent of the destructive process, I did not look upon this as an exceedingly untoward symptom. For three days the child remained in this same condition, the temperature continuing high, but the general condition of the patient being excellent, and offer-

ing no indication for further surgical interference. On the fourth day the child seemed a little dull, and the dressing was removed. The appearance of the wound was normal, and the patient cried lustily during the dressing. The next morning, however, the baby would not nurse and seemed dull and stupid. The corresponding side of the face was, perhaps, a trifle flattened, although the paresis was, by no means, certain. The temperature in the afternoon fell spontaneously to 101° , but in the evening rose to $104\frac{1}{2}^{\circ}$. During the night frequent hypodermics of strychnine and whisky were given, and in the morning the general condition seemed somewhat better. For twenty-four hours, however, there had been considerable difficulty in deglutition. I then removed the dressings from the wound, having determined to reflect a dural flap, and to explore the brain substance for a possible abscess. On introducing the probe cautiously at the upper and anterior angle of the wound, the instrument passed through the dura, and about a drachm of thick pus escaped. The probe being left in position as a guide, an incision about an inch long was made through the dura, and more pus evacuated. The child immediately began to cry, the procedure having been conducted without the use of a general anæsthetic, on account of the critical condition of the patient. A strip of iodoform gauze was carried through the dural opening into the abscess cavity, when the wound was dressed in the ordinary manner. For a time it seemed as if the evacuation of pus would entirely relieve the patient, but in about six hours the temperature again began to rise, and death followed the next day.

In the early part of the paper I spoke of the comparatively innocent character of an epidural abscess. Several of these cases have fallen under my observation, one of which I recall on account of the fact that the patient was only a few months old, and also because the operation was performed under difficulties. The history of the case made me almost certain that I had to deal with a simple mastoiditis, and that the operation would be but a trifling one. I had no assistant, therefore, aside from the member of the house staff who was administering the chloroform. On evacuating the post-aural abscess and exposing the bone, I found a sinus leading into the tympanic cavity. This was enlarged, and the carious bone removed by means of the curette. The instrument soon came down upon firm bone in front, below and behind. I next investigated the upper

portion of the wound, and curetting cautiously, found that the caries was more extensive in this direction. As I proceeded it was evident that the internal table was involved, and, upon removing a small portion of this, a considerable amount of pus escaped. This opening was enlarged in every direction until firm bone was encountered. The underlying dura was slightly congested, but nowhere adherent. After assuring myself that there was no further accumulation of pus within the cranial cavity, the wound was packed with iodoform gauze, and the child returned to the ward. The recovery in the case was absolutely uneventful, the temperature remaining normal throughout.

Thrombosis of the cerebral sinuses in children occurs probably much more frequently than the number of cases reported would seem to indicate. It is more than likely that many of the obscure cases in children, in whom the only symptom seems to be a high temperature and evidences of profound systemic infection are, in reality, due to general infection from the middle ear through these channels. One reason for making this statement is a specimen shown me by my friend, Dr. Holt, obtained from an infant who died a few hours after admission to the Nursery and Child's Hospital. There was no discharge from the ear at the time of the child's admission, and, as I remember the case, no history of any previous aural trouble. At the autopsy a large clot was found in the superior petrosal sinus, extending into the lateral sinus as well. Upon examination of the ear, it was evident that there had been a suppurative inflammation of the tympanum. The child died so soon after admission to the hospital that no measures could have been instituted for the relief of the patient.

One instance of thrombosis of the lateral sinus, in infancy has come to my notice during the last year. The patient, a little girl, three years of age, a year previous to the time of which I am now speaking, had been operated upon by me for a purulent mastoiditis, the typical mastoid operation having been performed. From this time until I saw her for the condition which forms the following history the child had been perfectly well. There had been no discharge from the ear, and the organ was in as good condition as its unaffected fellow. When I examined the child the drum-membrane was exceedingly red, and there was marked bulging of the posterior and upper segment. Over the site of the former mastoid

operation the tissues were slightly boggy. As there had been no drainage through the external auditory meatus, I did not at first attach much importance to this post-aural tumefaction, and was inclined to simply evacuate the pouch by free incision through the drum-membrane. On close questioning, however, I found that the child had complained of pain in the ear for about three weeks. This naturally changed my views, and I told the father that a second operation upon the mastoid would be necessary. Under chloroform the drum-membrane was first incised, and then the ordinary incision for exposing the mastoid was made. The large cavity in the bone, made at the former operation, was filled with fibrous tissue, which had been softened by the recent inflammatory process. This was thoroughly removed by means of the curette, and the underlying bone was found to be soft. Upon removing the softened bone I came down upon the dura covering the lateral sinus. I exposed the sinus for a distance of about three-quarters of an inch. Upon palpation the sinus seemed to be rather firm to the touch. An exploring needle was introduced and no fluid blood withdrawn. I then opened the sinus with a scalpel, and turned out a soft, dark, foul-smelling thrombus. The interior of the blood channel was curetted, both upward toward the torcular and downward toward the jugular bulb until very free hæmorrhage was established. The usual gauze packing was then applied, and the wound dressed in the ordinary manner. The child made a complete and uninterrupted recovery.

These cases already reported are fairly typical of the intracranial complications dependent upon neglected middle-ear inflammation. One naturally inquires whether any means exists for preventing these grave complications in such cases. There can be no doubt that if a middle-ear inflammation is properly treated in its incipency, the prognosis is invariably favorable. In making this statement, I refer not only to those cases which complicate the milder exanthemata, but to the severe inflammations which occur during the course of any profound acute infectious disease. It is important for the general practitioner to remember the frequency with which aural complications occur in the exanthemata, particularly in scarlet fever and in measles. A sudden and unexplained temperature elevation, with restlessness or evidences of severe pain, always calls for an otoscopic examination.

Many may say that the average practitioner knows so little about

otology, that he is incompetent to treat these cases, even if he recognizes the condition. I am inclined to dispute this statement, however. It is true that the general practitioner may not be an expert in otology. But he can certainly learn to use the head-mirror sufficiently well to see the drum-membrane, and to note changes in its color, position, etc. A diagnostic point of great importance, and one easily recognized, is the narrowing of the fundus of the canal in the vertical plane in acute inflammations of the middle ear. In other words, the drum-membrane may be completely hidden, and the examiner is apparently looking into a cone, the apex of which lies at the deepest part of the meatus. This appearance is frequently observed in infancy, even although the inflammatory process may have existed but for a few hours. It is due to the fact that the drum-membrane lies more nearly in the plane of the superior wall of the external auditory meatus in infants than in adults, the bony meatus being entirely absent. As soon as inflammation occurs within the middle ear, causing an effusion of serum into the cavity the drum-membrane is crowded downward, and as the fluid accumulates the upper wall of the meatus is dissected off from the underlying bone. The displacement is often so extensive that firm traction upon the auricle downward and backward does not separate the lower wall of the meatus from the upper wall at the inner end of the canal, the two surfaces apparently intersecting one another at the fundus of the meatus. The length of the canal is therefore diminished to a marked degree. In older children, where the bony meatus has developed to a certain extent, it is usually possible to obtain a view of the lower portion of the drum-membrane, although the upper segment may not be recognized, but is frequently mistaken for the superior wall of the canal. This portion of the membrane that can be seen may be normal in color, if the examination is made during the first few hours of the acute attack. The vertical diameter of the fundus is reduced owing to the tumefaction of Shrapnell's membrane and the contiguous integument of the canal. It will be observed that in these cases the outer portion of the meatus remains perfectly normal, and that there is no difficulty in introducing the speculum. This fact alone is sufficient to exclude an external otitis, and to establish the fact that the inflammatory process is located in the middle ear. Such a differential diagnosis does not demand any greater amount of skill in otology than

can be easily acquired by any general practitioner who is willing to familiarize himself with the use of a head-mirror.

When such condition exists, the physician should never hesitate, but should plunge a long, narrow knife through the swollen tissues until the internal wall of the middle ear is felt. The incision should then be carried upward to the superior wall of the meatus, the point of the knife still being kept in contact with the bone. As soon as the superior wall is reached the tissues should be incised for a distance of about an eighth of an inch,, the knife being made to divide all the soft parts down to the bone. Prior to the procedure the canal should be sterilized by irrigation with an aqueous solution of bichloride of mercury, 1-2000. The hands of the operator should be aseptic, and all instruments introduced into the meatus should be sterilized by immersion in a boiling soda solution.

In infants this operation can be performed usually without the administration of a general anæsthetic. Of course, it is painful, but the terror incident upon general anæsthesia causes, I think, as much suffering as the operation. In older children I frequently use nitrous oxide, as no constitutional effects follow its administration. After operation the ear should be irrigated, at first every two hours, and later, at longer intervals, with a solution of bichloride of mercury, 1-5000.

I am aware that much has been written upon the use of a gauze or cotton drain, in these cases, carried into the canal as far as the drum-membrane, the auricle being then filled with an absorbent dressing, which is retained in place by a bandage or some appropriate device. I have given this method a fair trial, and unhesitatingly say that it has caused patients considerable discomfort, while the results obtained have been less satisfactory than by the previous method. It is wise, immediately after incision, to insert a long, narrow drain into the meatus, to prevent the formation of a clot close to the wound. This drain, however, is removed in the course of three or four hours, and is not replaced. If the secretion is free, the patient is allowed to place a small pledget of aseptic cotton in the inter-tragal fissure for the sake of cleanliness.

If this plan of treatment is instituted in the early stages of an acute middle-ear inflammation I am convinced that the grave sequelæ will be seldom encountered.

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EDITORIAL.

EVOLUTION IN THE PRACTICE OF OBSTETRICS.

In every kind of human progress it is a useful practice to review from time to time the individual forward steps; this we call *history*. Wiser and more useful still is it to arrange and to consider those steps which formed the turning-points of thought and practice, were the beginning of epochs of human endeavor or opened up new vistas of intelligent advance; such a study is called *the science of history*.

We will endeavor to present in this short editorial a review, necessarily imperfect, of the more salient features of obstetrical development, marks which have punctuated the practice of that science and have left a permanent effect upon the allied specialties of gynecology and pædiatrics.

In an article on the indications for pathological laceration of the cervix uteri, published in the September number of this JOURNAL, Dr. Thomas Addis Emmet recalls the fact that almost twenty years ago, when it was the universal practice to delay the application of the

forceps until the latest possible moment, he proved to the profession that the then very common sequela of labor, vesico-vaginal fistula, was caused not by the use of the forceps, as generally believed, but by their non-use when the child's head had become impacted. He was the first to formulate the general law: *When the child's head in the pelvis ceases to recede after a pain, the forceps should be immediately applied.* That this rule was appreciated and generally adopted is proved by the fact that vesico-vaginal fistula, once considered incurable and subsequently for many years the reproach of obstetricians, is to-day one of the rarest injuries the gynæcologist is called upon to treat. But, as it is the fate of man rarely to escape from one error without immediately falling into another—in other words, as man is prone to extremes—the more general use of the forceps soon degenerated with many into an abuse. Hence, it has been a common thing, especially among the poorer class of patients, to apply the forceps merely for tedious labors—in other words, that the busy physician might save time. This form of dishonest practice has had such serious consequences, from a gynæcological point of view, that it is much less practiced now than formerly and thereby the practice of obstetrics has been greatly benefitted. It is unpleasant to believe that so reprehensible an act and one so unjust to the patient should have been not uncommon; yet the evidence presented to the gynæcologist attests it. Another advance in obstetrics which we also owe to Dr. Emmet is his blotting out of the old and firmly-impressed belief that the *anatomical* perinæum in woman played any part in the support of the uterus and vagina or that its tear during labor was of importance in itself. To him we owe the discovery that the uterus and vagina are not *supported* at all but that, in common with every organ in the body, they are swung from above by ligaments and that these ligaments are but offshoots and form still a part of the fascia which pervades the pelvis—a fascia which, in its integrity, maintains the relative position of every organ and determines the tension of the entire pelvic circulation. We know now that the entire object of the perinæum is that of a pad between vulva and rectum, by which the relative distances and normal curves of each organ are maintained. But even this function is possible only when the pelvic fascia is in a state of integrity, for the formation of a rectocele is the invariable sequela of a serious injury to that portion of the pelvic fascia which separates the vagina from the rectum and

forms the raphé which unites the double belly of the levator ani muscle. Thanks to the prevalence of a clearer appreciation of the true ætiology of injury to the pelvic floor, we hear less nowadays of the German vagary of supporting the perinæum during the end of the second stage of labor. Commensurately, the gynæcologist has fewer rectoceles to repair. Now, that Dr. Emmet has taught us that the laceration of the fascia which forms the floor of the pelvis causes relaxation of the entire fascial system throughout the pelvis and is the forerunner of prolapsus uteri, with its concomitant rectocele and cystocele, the absurdity of forcibly pushing back the descending head and thereby directing the entire *vis-a-tergo* against the fascia of the levator ani muscle is immediately apparent. It takes but a moment's consideration, thus, to realize what an insignificant part the anatomical perinæum, composed merely of skin, fat, a few blood vessels and scattered muscular fibres, in which the pelvic fascia does not at all enter, plays in the economy of labor.

Another and essentially the greatest advance in obstetric art and science is due to the application of *aseptic methods*. These permit the immediate repair of injuries which formerly were sources of local infection and became the site of the scar tissue of granulation, with its long train of local and reflex symptoms. Moreover, the obstetrician has by these means obtained an immunity in all surgical manipulations impossible hitherto.

Thus, the more obstetrics advances the narrower becomes the sphere of the gynæcologist and it may well be said that the obstetrician of the future will be the best gynæcologist, for he will practice the latter specialty by prophylaxis.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL
SOCIETY.

Stated Meeting, May 18, 1897.

The President, ROBERT A. MURRAY, M.D., in the Chair.

A Case of Undeveloped Internal Genitalia.

Dr. JARMAN: I would like to ask whether anybody here has seen anything like the following case: A young woman, nineteen years of age, in every way perfectly healthy, in every way developed apparently, so far as the pubes, pubic hair, breasts, voice, etc. are concerned. A physician brought her to me with the history that she had never menstruated. She had been examined three times by various gentlemen here in the city, and each time scarcely any vagina was found. When I examined her I was able to introduce my finger only three-quarters of an inch by actual measurement, when I came to something like bands of adhesions and, without any anæsthetic and without causing the girl any pain, I began slowly to pass my finger into the vagina, the two walls of which would separate with about the same resistance that you could separate ordinarily an adherent ovary from the posterior surface of the broad ligament. Bleeding occurred with it. About three inches from the vulva I came to a blind cul-de-sac. The girl was very easy to examine. I could make bimanual pressure and could feel a little knob about the size of the end of my thumb up above this cul-de-sac. I gave it as my opinion that the girl was not developed as regarded her pelvic organs, and gave an unfavorable prognosis so far as future development was concerned. That was six weeks ago. The physician told me the following week that the girl said that in every way she felt better after that little examination and she went to his office one week afterward to be examined again, because she felt a slight pain in the lower part of the abdomen. He found that the bands had reformed and one week later he called me in. I pressed the bands apart again. I told him I thought it would do no

harm though I did not see what good it would do; but, if he wished it, I advised that the girl use a Simms' vaginal tube—a small one. He did so. Last Friday he concluded he would dilate a little further. His finger passed into the rectum and the peritonæal cavity from the cul-de-sac. He recognized the rectum by fæces. I went to see the girl and found that he had undoubtedly made a recto-vaginal opening. The girl has had localized pelvic peritonitis. The case has progressed perfectly well since then, but I am fearful that the girl will have a recto-vaginal fistula in this very small vagina and I have no doubt it will be a most difficult sort of case to repair. What impressed me was this plastic exudate, which forms in the vagina, and the rapidity with which the walls reunite. I have been unable to find anything in the literature on this subject. We have all seen cases of poorly developed vaginæ, without any uterus and without any other pelvic organs, but these adhesions are just about what you would find in a fairly adherent ovary posterior to the surface of the broad ligament.

DISCUSSION.

Dr. SIMON MARX inquired whether the patient had ever been operated upon prior to the doctor's examination.

Dr. JARMAN replied that she had not.

The PRESIDENT inquired whether the patient had presented any menstrual tendency.

Dr. JARMAN replied that she had not; that he had questioned her particularly about that and had received a negative answer.

The PRESIDENT: Would it not be better to allow the fistula to heal, and, since the peritonæal cavity is so easily opened, to pass the finger up into the peritonæal cavity and ascertain by examination whether the organs are developed, because the former examination by the finger may have split some of the walls of the vaginal septum instead of going absolutely between the walls of the vagina? An exploratory operation made this way through the vagina would drain the pelvic exudates, if necessary. Personally, I have reported to the Society four cases that I have seen, one in Long Island City and three in this city. In three there were short pouches about three-quarters of an inch to one and a quarter inch long, where there were no evidences of other organs, and yet the one at Long Island City had a fully developed hymen. She was sent to me because she

with the result that in these two first confinements she had very severe perinæal lacerations. Last Sunday she sent for me, explaining that she was flowing more than usual. I found that she had a retroverted uterus with a small fibroid up at the summit of the uterus, and the uterus bent so far over and incarcerated so strongly that it was with the greatest difficulty that I could get my finger bent around to get the placenta out. It was the third month. It was so tender that I could not at the time replace it. I replaced it the next day. I washed it thoroughly at the time and put in an Allen Smith pessary, which held it in position, and, although it was almost six inches long at the time, it has reduced to its normal size. The peculiar thing which I noticed in those cases, and the point which Dr. Isaac E. Taylor remarked a long time ago, was that when the uterus is retroverted the portion between the internal os and the external os, is very apt to elongate. I have seen the cervix elongated so far that it was a physical impossibility with the finger to get through that cervix and feel inside the cavity. Especially is this the case in a retroverted uterus, because you have no way of getting it down to your finger. In the other cases of which I speak, and which I reported before, two of them died at the time, ten or twelve years ago, being too far gone to have an operation done. If at that time we had had the knowledge of taking out the uterus for septicæmia that we have now, I think that such an operation would have been the only thing to do.

Two Complicated Abdominal Hysterectomies.

Dr. AUGUSTIN H. GOELET presented two uteri removed by abdominal section which were interesting on account of the difficulty encountered in their removal because of numerous, firm adhesions of the intestines to all the pelvic organs.

The first case, Miss F., aged twenty-three years, was referred by Dr. S. P. Cahen, of this city, under whose care she had been for several years, during which time she had a severe and prolonged attack of pelvic peritonitis following a short time after dilatation and curettage for dysmenorrhœa. When she first came under Dr. Goelet's observation in November last she had a daily temperature ranging from 100° to 104°, which she had been having for a month or more, and she was emaciated and suffered constant pain. At that

time it was impossible to make a satisfactory examination, but the whole pelvis appeared to be a mass of exudation, including the whole pelvic contents. She was put upon daily applications of faradization and immediately experienced relief. After a few weeks the temperature returned to the normal point and she had no further exacerbations. At this time examination showed that much of the exudation had been absorbed, and the uterus, which was at first fixed, was somewhat movable and it could be outlined. On the left there was a mass of exudation sensitive to touch. On the right, where the exudation had to a great extent disappeared, neither the ovary nor tube could be made out. The specimen shows them glued to the front of the fundus.

The condition at this time pointed strongly to the necessity for an abdominal operation and the subsequent treatment was instituted with that end in view. The faradization was continued three to four times each week, and she was put upon tonics and a nutritious diet. She improved steadily and soon began to feel that she could resume her duties.

She entered my sanitorium April 5, and on the 6th the operation was performed. On opening the abdomen marked congestion of the peritonæal vessels was noticed and the intestines were adherent everywhere to the lower region of the abdominal wall, to the sides of the pelvis and to the uterus and bladder. These were separated with great difficulty, particularly those posterior to the uterus, and those binding the sigmoid flexure to the mass on the left of the uterus. In separating the adhesions at this point the gut was opened, but it was promptly closed by Lembert sutures. Subsequently an abscess was broken into which proved to be an ovarian abscess. This constituted the mass on the left surrounded by a thick wall of exudation.

The tube and ovary on the right, as the specimen shows, where folded over on the front of the fundus were fastened firmly there by dense adhesions. Several small cysts in this mass were ruptured in separating the adherent loops of intestines. At once it was seen that removal of the uterus with both masses was imperative.

To shorten the operation, which had already consumed considerable time, supra-vaginal amputation was done and the cervix left. The pelvis was flushed with normal salt solution, which was permitted to remain on closing the abdomen. Something over two

hours was consumed in completing the operation, and the patient was gotten to bed in a fairly good condition.

The highest temperature for the first four days was 100° . On the morning of the fifth day the temperature was $99\frac{1}{2}^{\circ}$, but the dressing was found to be soiled by pus which was oozing from the lower angle of the abdominal wound. An opening was made in the posterior cul-de-sac of the vagina and a considerable amount of pus was evacuated. A drainage tube was inserted through the vaginal opening, and the lower angle of the abdominal wound was opened and another drainage tube inserted into the pelvis. Through and through irrigation with bichloride solution was thoroughly done. The temperature at once dropped to 98° .

General sepsis was at this time manifest, but she improved very much for the first few days after this. On the third day after this, however (the eighth day after the operation), she had a sharp chill and the temperature jumped up to 105° . She continued to sink from overwhelming sepsis in spite of good drainage and repeated irrigation and died April 19, thirteen days after the operation.

The autopsy showed that the abdominal wound was healed except at the lower angle where the drainage tube was inserted; the pelvic roof was also healed, as had also the wound in the intestine, but a perforation of the gut was found a short distance from the rent. This probably occurred because of some thin point in the wall of the gut left where the adhesions had been separated.

The other case, Miss R., age forty-four years, was referred to me by Dr. Grace Pulver, of Torrington, Conn. In December, 1896, she had a pelvic peritonitis, and again in February of this year she had another attack. Following this there was an intermittent bloody discharge from the uterus which at times amounted to a sharp hæmorrhage. During this time she had acute exacerbations of fever, and later the discharge became offensive. March 17 of this year she entered my sanatorium and two days later an examination was made under anæsthesia. The uterus was partially fixed and to the left there was a mass involving the tube and ovary on that side. On the right the appendages appeared to be normal. A thorough curettage was done and the scraping preserved for microscopical examination. The uterus was soft and easily dilatable and the endometrium was broken down and spongy.

She improved very much after the curettage, the bleeding ceased

and there was no return of the increased temperature from which she had been suffering for so long a time previously. But the microscopical examination showed that the uterus was the seat of adeno-carcinoma and a hysterectomy was therefore decided upon.

The operation was done April 7. On opening the abdomen the intestines were found to be adherent everywhere to the pelvic organs. The adhesions to the uterus and bladder were easily sparated, but those binding the intestines to the mass involving the left broad ligament were very firm and unyielding. A small abscess in the mass was invaded in the process of enucleation, but with care infection of the peritonæum was avoided. This mass, which was soft and friable in places, was firmly attached to the left posterior wall of the pelvis in close proximity to the ureter and was with difficulty removed. After getting it free from the pelvic wall the uterus was removed in the following manner, viz.: the left uterine artery was tied and divided after incising the peritonæal covering of the uterus in front and behind and stripping it down, the cervix was then separated from the vagina at the cervico-vaginal fold all around, then the right uterine artery was clamped and divided between the clamp and the uterus, next the round ligament with its vessel were clamped and divided close to the uterus and finally the right ovarian artery was clamped and divided, and the uterus with its mass lifted out. This left a clear field for tying off the vessels on the right of the uterus. The vaginal vault and pelvic roof were closed by a continuous suture of fine chromicized catgut and no drainage was employed.

The patient was lowered from the Trendelenburg posture and the pelvic cavity was flushed with warm normal salt solution and the abdomen closed. The operation consumed something more than an hour.

The highest temperature recorded after the operation was 100° on the fifth day. The abdominal sutures were removed on the fourteenth day, and the patient has made an uneventful recovery without a single complication.

Inversion of the Puerperal Uterus: A Clinical Report.

BY SIMON MARX, M.D.

(See page 415.)

DISCUSSION.

Dr. JARMAN: I am not in a position to speak on the matter, because I have never seen a case of that kind. I have not heard for a long time a paper that has interested me so much, from the fact that the author has dealt with clinical facts exclusively, laying aside theories.

Dr. E. H. GRANDIN: I question if many are in a position to speak on this subject, because the reader's experience is decidedly an unique one. If it had not been for his kindness, I would never, up to date, have seen a case of inversion of the uterus although I have had considerable obstetrical experience. Fortunately, the paper brings up other points. The first point that suggests itself is his query as to whether in the case I saw with him the operation of total extirpation of the uterus was indicated or not. In this case it was the operation of election, the only operation; it was indicated because the inverted septic uterus was the source whence general lymphatic absorption was taking place. If any criticism can be offered—and it is not applicable to his case, because he did not see it early enough—it is that the hysterectomy was not done sooner. The reason, to my mind, why this woman died is that the heart was septic before we were ready to take out the source of infection, the septic uterus, and that is the reason why, under the most radical operations, in the face of lymphatic sepsis, we are apt to lose our cases. We have rarely been able to operate soon enough in these cases, because we are not in a position yet to distinguish early enough lymphatic sepsis and the extent to which it has gone beyond the pelvic organs. When the day comes when we can feel sure, after the initial chill we will say, that the woman has that type of sepsis which is quickly disseminated throughout the system, then early and radical extirpation of the pelvic organs, uterus, tubes and ovaries will give us a fair chance of saving these patients. The case I saw with the doctor taught me another lesson, and it is this: given

a case of inversion of the uterus, which does not yield to the routine measures, then without protracted manipulation, the thing to do is what was suggested twenty years ago by Thomas, of this city, and laughed at, to make a clean abdominal incision and dilate the contraction from above. You run far less risk of injuring the uterus, and the contraction which existed in Dr. M.'s case showed me the futility of ordinary measures in trying to reduce the inversion of the uterus. The contraction is often of the most aggravated type, considerable force being necessary to allow of reinvasion of the uterus. The last case which the doctor reported might possibly lead to the feeling that the Credé method had something to do with the occurrence of the inversion. If I remember his statement correctly, it was that after the delivery of the placenta, while the bandage was being applied, the woman suddenly collapsed and the uterus was found inverted. Very likely in this case, after the delivery of the child, there was a partial invagination of one or the other horn and the method, and pressure being made toward the rectum, or in the wrong axis, practically assisted the uterus in becoming inverted. As far as the drugs the doctor has mentioned are concerned, I am with him. I do not think we quite realize as yet the value of nitro-glycerine, not nitro-glycerine in the doses you find stated in the books, but in the doses which the doctor describes, one-fifth to one-tenth of a grain, repeated half-hourly for hours, provided the case be a proper one. It is not a proper drug to use where women are in collapse from acute anæmia; you make them lose more blood in that you take away from the arterial system the blood the heart needs; but in a condition of acute shock, not due to hæmorrhage, there is nothing more valuable than nitro-glycerine, provided you give it in large enough doses, which you can always do, for the simple reason that in a few minutes after you have given one-tenth to one-fifteenth of a grain under the skin, the effect passes off. I am glad the doctor laid stress on what is to my mind the only proper method of giving saline injections. It is not so many meetings ago that a plea was entered here for the use of that old-fashioned method, the intravenous method, and I then stated that in the very cases where we wished to use it, it was exceedingly difficult and sometimes impossible to find the veins, and long before you can find them you can flood the colon with hot salt water and it is absorbed just as quickly as if you had put it into the veins.

One further point, and when he was reading I knew what he meant. He will come around yet to agree with me, because over and again in the last ten years I have had him come here and criticise statements of mine and later found him the most enthusiastic advocate, as witness the elective accouchement, for instance. It may not be necessary to be sure that the uterus is thoroughly empty of all pieces of placenta. I agree with him perfectly that, in the vast majority of cases, those things will pass away. But can any one tell me when the case will happen that the uterus will not take care of those remnants, or when those remnants will set up a lymphatic sepsis? That is why I venture to enter the plea which I cling to still that, seeing it is far easier to explore the cavity of the uterus immediately after labor than a few days afterward, seeing that nowadays we realize the absolute necessity of keeping ourselves clean, I contend that it will do no harm, after the third stage of labor, to put the clean hand into the uterus and see if every portion of the placenta has been removed. I do not think it is bad practice to do so; I do think it is bad practice to fail to do so and then go in three or five days afterward and take out what you ought to be ashamed of yourself for having left in even for five days.

Dr. LE ROY BROWN: I have never seen a case of inversion of the uterus, and therefore cannot discuss the paper in that respect, but with reference to treatment after an excessive loss of blood, I do not agree exactly with what Dr. Grandin has said. I do not think that we should put aside entirely intravenous injections. I believe that while we should fill the colon with hot salt solution, we should also make an effort to put salt solution directly into the veins. It is certainly the most direct way, and if not in the veins, you can put it in an artery; by either course you get a more direct and rapid result. I have two very striking cases in mind. In one, the patient was brought into the hospital as an emergency case with a ruptured uterus; she was almost pulseless. The abdomen was opened, thinking at the time she might die on the table; the rent, which was from the vagina up into one horn of the uterus, was sutured. The nurse was directed, while the operation was going on, to put salt solution in the bowel, and she did it, two quarts probably; yet the immediate effect was not perceptible in the pulse. She was infused with salt solution; a pint had no effect, a quart had no effect; she was given two quarts, to which the pulse responded beautifully; in this

case it was given too fast, and, as a result, a sanguinous lung congestion followed, giving rise to a slow recovery. Yet she recovered and was discharged. The other case was one following a hysterectomy, and the slipping of a ligature. The vessel was caught after being put on the table. I was told she was pulseless, the assistant saying he could just get the heart beat. The nurse, when I started to pick up the veins, filled the colon with salt solution and whisky. The vein was picked up with considerable difficulty; if I had not gotten the vein, I would have put the solution in an artery with a hypodermic needle and syringe. That woman was given four quarts in all. She was given first two quarts; her pulse came up as good as my own; the vein was tied off and she was put back to bed. I stayed in the hospital an hour and a half. I went back to see the patient; her respiration was at 40, her pulse had become again thready and very rapid; there was no bleeding; she was given two quarts more in the other arm. She made an uninterrupted recovery, except that she was excessively anæmic. In that case, the infusion was given slowly, much more slowly than in the other. She had no trouble with her lungs at all. Here I believe salt solution was used in the rectum yet there was no marked effect, but it was simply beautiful to see the way her pulse came up with the intravenous injection. I do not believe we should throw it aside. I believe we should use it intelligently.

THE PRESIDENT: I have seen four cases of inversion of the uterus. Three of them I saw at the time of labor in cases I was handling myself, and one in consultation. The two first were in primipara, and they were recognized immediately, because the labors gave characteristic signs that made me anticipate an inversion. Curiously enough, those two cases happened the same day. One occurred in Spring street, and was the only pregnancy of a woman of thirty-seven years, and I noticed, at the time of labor, that with every pain the child would go down a little but it would as quickly retract, so that it seemed to be pulled back, and while my hand was on the uterus I felt it. I told the husband the condition of affairs and he asked me if I would wait until the surgeon who had been his family physician for many years was called, and advised for a short time to let the labor proceed normally. I then put on forceps, as the patient, on account of heart disease, was getting in a dangerous condition, and delivered the child rapidly but it was dead. The cord

there was not a short one; it was very long, but it was twisted three times around the neck and under the right arm and made a figure "8" over the shoulder and under the left arm and then straight down to the abdomen. The cord was about thirty-one inches long. The next case was one that I saw just after leaving this one, a young woman twenty-two years old, with her first child. She had another physician who attended her, and he called me in consultation. When the head descended to the brim of the pelvis, and before it came under the pubic arch, I noticed that with every pain the patient would experience intense suffering, becoming very pallid, and when the pain would reach its height it would suddenly break off and she would lie almost absolutely in collapse. I put my hand on the uterus and watched her do this several times, telling her husband I thought it was due to a short cord. I put on the forceps and delivered rapidly. I do not think the cord was quite six inches long. It tore off at the abdominal wall. Another case I saw was only a partial inversion, and was determined, I believe, by my nurse pressing down in a way that I believe a great many do press on the uterus; that is, by putting the fingers on the summit of the uterus and pressing it instead of grasping it in the hand. It is very curious to observe nurses hold the uterus, and it is very infrequent that you find a nurse who knows how to hold the uterus properly or to knead it so as to cause it to contract without pressing on the fundus. In this case, I was taking care of the baby's eyes, the nurse was holding the uterus, the placenta had been delivered, when the nurse told me the uterus was going away from her finger. I examined the abdomen and fortunately I could feel the apex of the uterus. It was sunken so markedly that at first I did not think I had hold of it at all. I immediately dilated the cervix with my fingers and the result was that I replaced it and gave her a hypodermic of ergot which caused firm contraction. There is one peculiar fact that I have noticed in the doctor's paper and which impressed me in the cases that I had years ago; and that is, the sudden collapse although there is very little bleeding, and so marked in one of these cases, though only a partial inversion. The other case that I saw was one of complete inversion, where I was called in the day after delivery. There the uterus was inverted in the vagina and parts of the placenta were still adherent. The patient had ceased to bleed, as the attending physician had stuffed a handkerchief into the vagina. She was in

a fairly good condition. She was not in the shock I saw in the other case, although the doctor told me she had been in a very deep shock and had lost a great deal of blood and he put in this handkerchief with a solution of bichloride of iron. I found the mass matted together, and the handkerchief stuffed in so hard that I was afraid of tearing off the membranes. The uterus was like a hard ball and so contracted that it was almost impossible to grasp hold of it; that is, it was so sloughy, although it was only one day from the labor. After giving a very large injection of hot water, I was able to get my hand into the uterus and by counter pressure from above and continuous pressure from below for almost an hour, we managed to get the uterus softened somewhat, and then it was quickly replaced; first one horn and then the other horn of the uterus went up with a good deal of snap. That brings to my mind the next point, which is that in these cases, if we do meet them, it is absolutely necessary that asepsis be carefully performed. There is no necessity because the uterus is inverted that the patient should become septic. Of course, in these cases, there must necessarily be a great deal of handling to reduce the inversion provided we do not see it at the time or recognize it at the time, and so much the more should we take care to keep our hands and the patient clean. In regard to the treatment that the doctor has followed in his particular case, I should say that, under the conditions, I do not know what else could be done. With the loss of blood and the septicæmia, the chances were altogether against the operation, but if the case had been kept aseptic, even with the shock, the chances are that she would have been saved by that method of treatment. I believe no other treatment could possibly have been thought of, and I think the doctor is to be congratulated in having the courage to follow the course.

Dr. BOLDT: I should like to ask Dr. Marx upon what he bases his diagnosis as to the cause of death in those cases.

Dr. MARX: I am glad that Dr. Grandin acknowledges the fitting of the cap, but when I condemn the practice of introducing the hand into the uterus as reprehensible, I am not speaking of him or any expert, but I am simply dealing with the general practitioner, who, we know, cleans his fingers in a perfunctory manner. Now, under those conditions, I believe that this teaching is absolutely dangerous. The teaching emanating from a man of the standing of Dr.

Grandin, goes out through the city and into the country, and every country practitioner and every ordinary practitioner of medicine is sticking his hand into every woman's uterus, and, if she is not already septicised, she will be after he passes his hand into the uterus hunting for an imaginary piece of placenta. If Dr. Grandin passes his hand into a uterus, it is safe and if he does it is for a reason, and I do not believe that he passes his hand into the uterus as a regular measure.

Dr. GRANDIN: Only when I think there is something in there.

Dr. MARX: I believe he pleaded once for the introduction of the hand into every uterus, and it was published in the *American Journal of Medical Sciences*. As to the question asked by Dr. Boldt, the difference in diagnosis appears to me to be simple, from the mere fact that after the operation, in the four cases where I did these hysterectomies, the patients were all progressively improving, the temperature dropped, there was increased discharge of urine, there was no further evidence of sepsis; but after improving, by some unfortunate movement, sitting in bed or something of that sort, they suddenly died. In those cases it is not due so much to the septicæmia *per se*, but to the degeneration of the heart muscle. Of course they die of sepsis, but not so much from the sepsis as from the acute heart failure from a degeneration of the myocardium.

Official Transactions.

ARTHUR M. JACOBUS, *Secretary*.

TRANSACTIONS OF THE CHICAGO SOCIETY FOR
GYNÆCOLOGY AND ABDOMINAL SURGERY.

Stated Meeting, June 3, 1897.

The *President*, ALBERT R. MARTIN, M.D., in the Chair.*Hysterectomy.*

BY BYRON ROBINSON, M.D.

(See page 391.)

DISCUSSION.

Dr. BARTHOLOMEW: I have been very much interested in Dr. Robinson's valuable and exhaustive paper. The subject of vaginal hysterectomy is one of increasing interest and importance. While the history of the procedure dates back to ancient time, the operations previous to the last two decades were so occasional and the work so unsystematized that they are of little value to operators of the present day except for their historic interest. Vaginal hysterectomy is no longer an experiment; indeed very few operations have been subjected to such critical scrutiny and warm discussion and very few operations have withstood the test as well. The question, it seems to me, has not been definitely asked, when is hysterectomy indicated? and, when indicated, shall we choose the vaginal or the suprapubic route? The indications for vaginal hysterectomy have been very clearly pointed out in Dr. Robinson's paper. In a very general way we can say that an infected uterus, and I mean by infected uterus, one in which the walls of the uterus are involved with the diseased annexa, should be removed. Well, I think every one with experience must realize that the temptation is very great to employ this measure in some cases which might be cured by means less heroic. Some interesting cures are being reported of late by more conservative operators, and these reports,

coming as they do, from some of the best surgeons of the country, command our confidence. Future study and greater experience and such excellent papers as we have had the pleasure of looking through this evening will do much to decide in which cases the operation in question will be most beneficial. One very interesting point brought out in the paper is the occurrence of hæmorrhage from an atrophied uterus after the ovaries and tubes have been removed. I have been at a loss to explain the cause of this condition, which I have noticed in a number of my cases in which I am positive every particle of ovarian tissue was removed. Dr. Robinson's method of preventing prolapse or hernia is ingenious and yet simple and will stand because on correct anatomical principles.

Dr. MARTIN: Hysterectomy is being so thoroughly discussed by all the leading gynæcologists of the Continent and America that it would seem almost threadbare, but it is one of the most vital subjects with which we have to deal. Dr. Robinson's paper is so thorough and co-incides so nearly with my views that it will be hard to find points for discussion. Prof. Paul Segond, of Paris, said a few years ago: "In the majority of cases by bilateral peri-uterine supuration, vaginal hysterectomy with or without ablation of the appendages is destined to be the operation of the future." Péan does hysterectomy in all cases of double salpingitis where it is necessary to remove both tubes. It is agreed by all authors that shock is greatly lessened. Absence of shock and ventral hernia are to be considered. Drainage is most thorough because the areolar tissue of the entire pelvis is reached through the focus.

Something has been said lately of the degeneration of nerve fibres, after extirpation. Clinically, we see a purely physiological process presenting the same symptoms and results as mature menopause. We do find inflammatory conditions in the stumps of previously extirpated tubes which nothing but hysterectomy will relieve. Aside from the pathological indications, I think the social position of the patient should be considered; where the burden or support of family or self is involved, rapid and complete recovery is a desideratum.

I do not wish to be classed on the side of radicalism. Conservatism should be our watchword, yet experience has taught me that piece-meal surgery in gynæcology has only prolonged suffering and done no credit to the profession.

Dr. ORVILLE W. MACKELLAR: I feel profoundly grateful to Dr. Robinson for the paper he has presented this evening. It covers the subject very thoroughly and represents a large experience and facts gained from personal work. An eminent gynecologist, Dr. Polk, of New York, has remarked that vaginal hysterectomy is in the interest of the patient, the abdominal route in the interest of the operator. I think Dr. Robinson omitted an important point in not describing the difficulties encountered in dealing with the bladder. The position of this organ in the nullipara is far up on the neck of the uterus and may be easily separated, the reverse being true in the multipara, where we find the bladder closely hugging the margins of the anterior part of the neck and the operator must exercise great care and skill when making the circular incision else he may wound the bladder, which has happened at the hands of some of our most skillful surgeons. Tears of the intestines and bladder may happen and complicate the condition by escape of contents. This is no doubt a serious drawback to the operation, and here is where the abdominal method is superior as it is far easier to repair a tear from above than from below.

Vaginal hysterectomy is to be preferred as it causes less shock, offers less danger of infection of the peritonæum and does not produce a visible cicatrix and allows a perfect drainage.

Dr. WILLIAM DUNCAN: I am convinced of the utility of vaginal hysterectomy from the smooth recoveries and the more perfect relief from the affections calling for surgical interference. The shock to the system is certainly less and the mortality smaller. Dr. Robinson's paper presents the essential phases of the operation from a large personal experience. It is one of the operations of the future.

Dr. BYRON ROBINSON (in closing): One of the most valuable methods in vaginal hysterectomy is the use of the broad ligaments to anchor the upper end of the vagina high in the pelvis. This prevents vaginal hernia. The broad ligaments may be fixed to the upper end of the vagina by silkworm gut sutures left long and subsequently removed. Catgut sutures may be removed, but there is danger of infection in the open healing of the wound. Silk may be used and left long so that every ligature may be removed. Dr. MacKellar's remarks in regard to the bladder are timely. The bladder in the multipara lies frequently very low and is apt to be

torn. However, if one spreads the tissues well toward the side with the two index fingers the ureters are not liable to be injured, especially if the fingers be brought from behind forward over the uterine artery. In regard to hæmorrhage from the uterus after removal of the appendages, I have had perhaps a dozen well-marked cases in about five hundred. One patient flowed profusely for three years subsequent to the removal of the appendages. In these cases the uterus is found in several different pathological conditions, namely: chronic metritis, small myomata developing in its walls or in an atrophic, metritic condition. The bleeding must be viewed to a reflex action; that is, the irritation produces a paralysis of the vasomotor nerves of the uterus and consequent dilatation and vascular leakage.

Large Interstitial Fibromata.

Dr. LUCY WAITE presented two specimens of large interstitial fibromata removed per abdomen. One was accompanied by an ovarian dermoid larger than a child's head. This case was remarkable in that the patient presented no symptoms whatsoever usually accompanying large interstitial uterine masses. Menstruation was regular and painless and normal in quantity, appetite good and general health apparently perfect. During the last few months previous to operation the entire mass had taken on a rapid growth, and the patient, who was herself a physician, was led to the operation in the fear that the tumor might become malignant. The patient made an uneventful recovery.

Official Transactions.

LUCY WAITE, *Editor of Society.*

ABSTRACTS.

OBSTETRICS.

GREAT BRITAIN.

*Two Cases in Which Porro's Operation Was Performed For
Impacted Pelvic Tumor Preventing Delivery.*

BY MAYO ROBSON, F.R.C.S.,

President of the British Gynæcological Society; Senior Surgeon to the General
Infirmary at Leeds; Professor of Surgery in the Yorkshire College of
the Victoria University.

The author read a paper on two cases in which he had performed Porro's operation for impacted pelvic tumors preventing delivery. In both cases the mother and child were saved and are now well.

The first case was one of pregnancy at term, the pelvis being completely blocked by a suppurating ovarian cyst complicated with a large septic abscess, bounded by uterus, ovarian cyst and intestines.

The second case was for myoma of the posterior and inferior segment of the uterus completely blocking the pelvis. The case had been recently seen, and the remains of the pelvic tumor had completely disappeared. After relating the cases in detail he remarked that where from any cause delivery cannot take place naturally, there are no less than six operations which may be performed in order to save both mother and child:

(1) Symphysiotomy, (2) ischio-pubiotomy, (3) complete hysterectomy, (4) laparo-elytrotomy, (5) Cæsarean section, and (6) Porro's operation.

In the cases related where the pelvis was completely blocked by tumors, the two former methods were inapplicable.

Total hysterectomy during advanced pregnancy would probably

[Author's abstract of paper read before British Medical Association
Canada Branch, August, 1897.]

only be resorted to in case of cancer of the uterus on account of the longer time occupied in the technique.

Laparo-elytrotomy would have been unsuitable in either, as in one the lower segment of the uterus was involved in the tumor, and in the other the tumor could not have been dealt with had that operation been done.

The only methods available therefore were Cæsarean section and Porro's operation. Cæsarean section is the operation "par excellence" for obstructed labor depending on pelvic deformity, but in these cases it was out of question, as in the first instance the tumor so completely blocked the pelvis that drainage of the uterine cavity could not have been effected, and in the second, had the uterus been left, septic trouble must have followed, as the posterior wall of the womb was actually forming the anterior boundary of the abscess sac and was itself thoroughly involved in the septic process.

Porro's operation was therefore the only procedure left, and it answered so well that had he other similar cases he would not hesitate to employ it.

Moreover it must be borne in mind that Porro's operation can be very rapidly performed and requires only a small armamentarium, important factors in case of urgency and in emergencies at a distance from a surgical centre.

THE STATUS OF GYNÆCOLOGY ABROAD.

IRELAND.

The Conservative Treatment and Therapeutics of Fallopian Tube Disease.

THOMAS MOORE MADDEN, M.D., F.R.C.S.E., M.A.O. HONORIS
CAUSA, ROYAL UNIVERSITY.

Obstetric Physician and Gynæcologist to the Mater Misericordiæ Hospital, Dublin, etc.

In dealing with cases of chronic salpingitis or purulent effusions in the Fallopian tubes, the most common origin of which is bacteriological invasion, consequent either on gonorrhœa or on puerperal sepsis, there can be no special reason for departing from the generally-recognized first principles of therapeutics.

These primary objects of all treatment, whether surgical or medical, are, I presume, not merely the removal of actual disease, but also the restoration, as far as possible, of the structural and functional integrity of the affected parts.

Thus, for instance, if the mammary gland were the seat of a purulent collection, or if, as the late Sir Spencer Wells suggested, the case before us was one of hydrocele, would it not be more advisable to open the one or tap the other than to ablate the affected gland in either case? Acting therefore on these principles, I have for many years, in the first instance at least, treated by conservative measures such as aspiration, a considerable proportion of the cases of pyo or hyosalpinx that have come under my observation.

The successful results that may be thus obtained in many, though by no means in all cases of this kind has been proved in my wards in the Mater Misericordiæ Hospital. Moreover a preliminary resort to such measures, even if unsuccessful, will not interfere with the results of subsequent salpingo-oöphorectomy if that be then necessitated.

[Author's abstract of paper read before the British Medical Association, Canada Branch, August, 1897.]

The method of aspirating the tubes referred to may be here briefly described.

In the first place, to permit the necessary manipulation, the patient should be put under some anæsthetic and placed in the ordinary left lateral gynæcological position. Then the operator introduces the index and first fingers of his left hand through the sphincter and upward and forward, along the outlines of the posterior uterine wall, the fundus being pressed down by his assistant's hand over the hypogastrium.

In this way the tubes and ovaries can be readily palpated, and if there be any inflammatory or cystic enlargement of the former, it may be distinctly recognized as a tortuous, elongated, sausage-shaped or rounded fluctuating tumor, extending from the side of the uterus outward to the broad ligament and backward into Douglas' fossa.

Having thus ascertained the position of the pyo- or hydro-salpinx, the next step is to carefully introduce, per vaginam, on the point of the right index finger, a long fine needle, affixed to the aspirator up to the roof of the posterior vaginal cul-de-sac.

Through this the needle is to be passed into the retro-vaginal fossa, and thence guided by the operator's left index from the rectum up to the most prominent presenting part of the tubal swelling, into which it is to be plunged. The top of the aspirator is then to be turned, so as to give exit to the contents of the dilated tube, the expulsion of which may be assisted by the steady pressure of the assistant's hand from about the hypogastrium down into the pelvic cavity, and continued until the tube is completely evacuated. After thus, the cyst cavity should be washed out with an antiseptic, and the vagina should be rendered aseptic by insufflation with iodoform.

Then no further local treatment, beyond hot carbolic irrigation, will generally be required, unless the tube should, as sometimes happens, again fill, though probably to a lesser extent, when the same procedure may be again repeated until the oviduct has become reduced to its normal size.

Curetting Fundal Orifice of Tubes; Treatment by Electricity.—The most common immediate cause of cystic accumulations in cases of chronic salpingitis is mechanical obstruction of the uterine orifice of the oviduct, due either to chronic follicular endometritis flexion; or, in some instances, supra-involution of the uterus.

Under such circumstances the tubal obstruction is most likely to be relieved by dilatation, followed by curetting of the diseased proliferating endometrium in the first instance, or by the rectification of the flexion in the second, and by faradization in the last-named cases. The faradic current has, moreover, not only in these but also in other forms of chronic salpingo-oöphoritis, been in some instances successfully employed by Dr. Apostoli, of Paris, who generally employs, in such cases, the faradic current of tension, applied in moderate doses, and for only a few minutes at a time, for which he claims the most remarkable curative results in such cases. Another recent authority on this subject—Dr. Milne Edwards, of Edinburgh—does not believe, however, that the galvanic current is suited to cases where there is definite organic change in the ovaries, but considers that here faradism may possibly be of service.

In those graver, and somewhat more exceptional cases than is generally supposed, in which, from the extent of Fallopian disease, or from the implication in its course of adjoining structures, the urgency of the symptoms attending its progress, or other causes, it becomes impossible to deal satisfactorily or safely with such cases by the methods already referred to, there then only remains for one adoption the complete removal of the uterine appendages. I have elsewhere discussed this operation, at which I have now had sufficient actual experience to enable me to say that unless occasionally imperative and unavoidable, it is by no means so universally satisfactory either as regards the immediate or the remote condition of the patient operated on as seems to be commonly believed; without further discussing this topic on the present occasion, however, I shall now merely add the question of election or necessity I regard as the cardinal point to be decided in considering the expediency of removing the uterine annexa in the treatment of Fallopian tubal disease. In many instances, unquestionably, as I have already said, that course becomes an unavoidable necessity, and is then the obvious duty of the surgeon. But it should not be forgotten, however, that in probably a no less large number of cases, tubal disease may also be successfully treated by some of the less heroic but equally effectual remedial and conservative local measures to which I have now referred. Such topical treatment should, moreover, in many instances be comjoined with the no less essential constitutional remedies indicated by the special exigencies of each case; but, above

all, and as a general rule, by a long-continued mild mercurial course, in combination with full doses of iodide of potassium, together with blistering, followed by mercurial inunctions over the seat of pain.

GREAT BRITAIN.

Pelvic Hæmatocele.

CHAS. J. CULLINGWORTH (*Lancet*, June 19, 1897) in speaking of pelvic hæmatocele, refers only to intra-peritonæal effusions of blood limited by encapsulation or by adhesions; and excludes all free hæmorrhages into the peritonæal cavity and all hæmorrhages into the broad ligament. It is now agreed that pelvic hæmatocele in this restricted sense is, when not traumatic, almost always the result of tubal gestation. The instability of the ovum in the tube is due to the insufficiency of the vascular supply, the lack of a properly constituted decidua, and the unsuitability of the muscular wall of the tube, which, instead of undergoing hypertrophy, becomes thinner and thinner. With this increased distention and thinning of the tube wall, sometimes after a primary intra-tubal hæmorrhage and perhaps also a shock or strain, the tube ruptures and the blood, with or without the ovum, is poured out into the peritonæal cavity or between the folds of the broad ligament, in the latter case often passing into the peritonæal cavity after a second rupture; generally in intra-peritonæal rupture the blood is free and diffused among the abdominal organs.

We may now consider those cases in which after the primary hæmorrhage into the tube rupture does not take place; the blood is contained between and around the coverings of the ovum and gives rise to what is sometimes known as a tubal mole; the ovum is usually destroyed by the pressure. It has been shown that the abdominal ostium of the pregnant tube remains patulous for at least six weeks; and up to this time it is possible for the effused blood and the ovum to escape from this opening into the abdominal cavity without rupture of the tube, such an occurrence being called a tubal abortion. Should the embryo, without the rest of the ovum thus escape, it is known as an incomplete tubal abortion; and when there is merely hæmorrhage, as a threatened tubal abortion, though the author thinks a better term is "hæmorrhage from the open end of a preg-

nant Fallopian tube." Though this blood may be poured out rapidly, to be freely diffused among the abdominal viscera, it is generally but a continued trickle which becomes encapsulated, forming a pelvic hæmatocele; and it is the author's aim to show that this hæmorrhage from the open end rather than from a rupture of the tube, is the usual genesis of pelvic hæmatocele.

Both rupture of the tube and hæmorrhage from its open end are almost always preceded by the formation of a tubal mole; and in either case we find the tube filled with clotted blood. It follows that there must be a time when the hæmorrhage is wholly intra-tubal; and the author has operated in six such cases, in four of which, though the ovum was not found, the clinical history left no doubt as to the origin of the hæmatosalpinx. Thus hæmatocele is almost always associated with hæmatosalpinx, and we generally find the two clots continuous with each other.

Taking twenty cases of his own, operated on for pelvic hæmatocele, in which the hæmatocele was the most conspicuous lesion, not merely an accidental finding, the author found the source in nineteen to be the free end of the unruptured tube; in one only had rupture occurred from the tubal gestation. The remaining case was very curious: on one side there was a tubal pregnancy, but the hæmatocele was on the other side due to hæmorrhage into a cyst of the broad ligament with subsequent rupture. Taking also thirty-four cases of early tubal gestation operated on in his own practice, the author found in six a tubal mole with neither rupture nor hæmorrhage external to the tube; these do not now concern us. Of the remainder, nineteen presented a tubal mole with hæmorrhage from the free end of the tube, and nine rupture of the gravid tube. Of the nineteen, pelvic hæmatocele resulted in seventeen, while in the other two there was a free effusion of blood into the peritonæal cavity. On the other hand, out of the nine cases of rupture of the tube free effusion of blood into the peritonæal cavity took place in seven; in only one was there a pelvic hæmatocele formed, and in one hæmatoma of the broad ligament.

The inference from these cases, though they are few, seems to be plain. Moreover many practitioners have met with cases, without doubt of pelvic hæmatocele, in which the swelling has gone down and complete recovery taken place after no treatment but rest; and how is it that so many cases take a favorable course without active

intervention if they are really due to a ruptured tubal pregnancy? On the other hand, if these cases be caused by hæmorrhage from the open end of the tube, it is easy to see how the blood being small in quantity is absorbed together with the slightly-developed ovum. In view of these facts, when is it safe to withhold operation? Only, the author thinks, when the clinical history points to the hæmorrhage having occurred early in the pregnancy; later, the products of conception are too large for absorption and risk of further hæmorrhage too great to delay the operation. If the clinical symptoms seem to point to rupture we should operate; and in any case where the swelling is increasing, or repeated attacks of pain and faintness seem to indicate that hæmorrhage is still going on.

Of course there are other rarer causes of pelvic hæmatocele; but many of the cases assigned by the older writers to various causes are now recognized to have been merely early tubal gestation.

GERMANY.

A Contribution to the Question of Uretero-Abdominal Fistula

SEIFFART (*Centralbl. für Gyn.*, May 29, 1897) performed laparotomy for a cystic tumor in the broad ligament, about the size of a man's head, reaching above to midway between the symphysis and umbilicus, below to the bottom of the pelvis, while behind it reached the promontory, from which it could not be separated. In the enucleation two cords about as thick as the finger, running from behind on the right diagonally forward and to the left, obstructed the way. On dividing the outermost cord between ligatures, it was found to consist of fibrinous masses, tumor wall and peritonæum; but on removing in the same way a section from the second cord, about four centimeters long, the latter was found to contain a piece of the ureter. Completing the removal of the tumor, the operator approximated the cut ends of the ureter as closely as possible (within about two centimeters of each other) and sutured them in this position to the abdominal wall. The case progressed favorably, the bladder containing but little urine, most of it being passed by the fistula. The operator intended doing a secondary nephrectomy, but meanwhile kept the lower part of the ureter pervious by daily catheterization. It was observed that the space between the two openings of

the ureter in the abdominal wall was gradually decreasing, the two openings approximating till about four months after the operation they formed a single outlet, no larger than the button of the sound; while with the decrease in the abdominal wound, the quantity of urine in the bladder increased, and the fistula secreted less and less. The fistula was then closed with adhesive plaster; no urine escaped, and eight days later the opening was found to be completely closed. The patient has since been under observation for three months; in the situation of the fistula the abdominal covering is very thin, allowing the intestines to be felt through it; frequent cystoscopic examination of the bladder shows that the right ureter voids urine perfectly; at its insertion in the bladder wall, however, there is a slight fundibuliform sinus, showing that by its shortening it has exercised and still exercises some traction.

(G. H. MALLETT, New York.)

PÆDIATRICS.

UNITED STATES.

Infant Feeding, With Special Reference to Modified Milk.

J. H. SEYMOUR (*Southern California Practitioner*, May, 1897) describes methods by which milk modification can be done with accuracy at home. In artificial feeding it is well to begin with percentages somewhat lower than those of breast milk, say, two per cent. of fat, six per cent. of sugar and one per cent. of proteids; afterwards we may have to change these percentages, for normal infants, and much more those that are ill, vary in their requirements. Holt has devised a schedule showing the needed percentages for an average child from birth to eighteen months, and a list of formulæ for obtaining these percentages. His materials are: Ten per cent. cream, eight per cent. cream, plain milk, solutions of milk sugar of five, six, seven, eight and ten per cent. strengths, and lime-water. Suppose we wish to prescribe modified milk for a healthy three-months-old child: He will need during the twenty-four hours eight feedings, of four ounces each, of milk containing fat three per cent.,

sugar six per cent., and proteids one per cent. The formula shows us that to obtain these percentages twelve per cent. cream should be diluted three times with seven per cent. sugar solution; to prepare a quart of the milk therefore we should take eight ounces of the cream and twenty-four ounces (including an ounce and a half of lime-water) of the sugar solution. Suppose we have a twenty per cent. cream, we obtain the twelve per cent. by diluting the former with equal parts of plain milk; the sugar solution we get by dissolving one and three-quarters ounces of milk sugar in twenty-four ounces of boiled water, which includes the ounce and a half of lime-water. Pasteurization can be easily done by placing the bottles in a dish of water, the water coming up to the level of the milk; the water is then heated to 170° F., when the dish and bottles are removed and covered with a heavy cloth for twenty minutes; the bottles are then cooled. Or we may use an Arnold steam sterilizer without the hood, allowing twenty minutes for heating and the same for pasteurizing.

Where one cannot obtain a uniform cream, one may follow Rotch's method. A quart glass of good milk is allowed to stand for six hours in iced water, and the lower three-quarters siphoned off; the remaining upper quarter contains ten per cent. cream; besides the milk and cream thus obtained we must have lime-water, plain water, and milk sugar, put up in packages of three and three-eighths drachms each. A long list of formulæ are given by Rotch, by means of which from these materials milk of any percentage of ingredients can be made up.

The Dietetic Treatment of Infantile Diarrhœa.

O. T. OSBORNE (*Yale Med. Jour.*, May, 1897) notes a number of things we should take into consideration in the feeding of children. We should remember the stomach capacity of infants of different ages, it being a fact that the stomachs of artificially-fed babies are larger than those of breast-fed ones; this must imply some dilatation from over-feeding. The condition of an infant can be best estimated by regular weighing. The nervous system of a child is excitable and its brain large in proportion to its body; so that excitement or peripheral irritation easily disturbs digestion. A child is moreover more sensitive to temperature influences and its digestion disturbed thereby, because its skin surface is relatively great and its thermo-

taxic center poorly developed. There is very little amylolytic power in either the saliva or the pancreatic secretion for the first year. We must watch the stools, which should be golden yellow on a milk diet but which change to brown on the addition of amylaceous or proteid food. Breast-fed children may be affected by nervous excitement of the mother or by drugs that she has taken. As dietetic causes of diarrhoea we may name over-feeding, too frequent feeding, improper foods and impure foods. We occasionally see a child that does well on a starchy food before the end of the first year, but theoretically it should not be given until the second year; after the second year we can make the diet quite varied, giving largely starchy or largely proteid food as the child seems to require. For young infants, it is important to add a small quantity of salt to each feeding.

Diarrhoea is only a symptom, not a disease. It arises chiefly from intestinal indigestion, generally to be referred to the duodenum, or from indigestional fermentation. In any case the treatment should be a mild cathartic, rest and quiet, and the withdrawal of all food for from twelve to twenty-four hours, giving only sterilized water; or, if it is a fermental diarrhoea, barley water. Most fermental diarrhoeas are due to bacteria that grow and develop their toxins in decomposed proteids, these decomposition products clinging to the mucous membrane of the intestines. Theoretically, we should give bowel antiseptics, but we do not yet know how much antiseptics we can cause in the bowels. Therefore it is best to clean out the decomposing material already there and see that we add nothing further to undergo the same changes. Moreover as this fermentation is chiefly due to proteid decomposition, a change to a starchy diet implies a change of the medium in which the germs have been growing to one in which they do not thrive. It is important that baths should be given and that the napkins should be kept clean. We must not forget, while we are withholding food, to frequently allay thirst by boiled water or barley water, in small quantities at a time. When we begin to give food it should be peptonized milk, much diluted and with a little lime water.

True cholera infantum is a rare disease; food does not digest and should be entirely withheld, but fluid must be supplied; we wash out the stomach and intestines, use warm baths and warm packs, and quickly-acting medicinal treatment.

We may also have an ileo-colitis—simple, follicular or membranous. The dietetic treatment for the first twenty-four hours is the same as for a fermentative diarrhœa; high injection of plain or medicated water is also excellent, and, as soon as possible, change of air.

Some Observations Upon the Training of the Mentally-Deficient Epileptic Child.

ELIZABETH D. HOLT (*Pædiatrics*, May 15, 1897) says that much of the training of mentally-deficient epileptic children should be object lessons from outdoor nature. Moreover, as it is said that "the mechanism of attention is essentially motor, and that concentration of attention and movements go together," we should try to train the vague, incoördinate movements of these children to some useful purpose, thereby at the same time strengthening their mentality. We should try to develop them in the lines to which they incline, not bring them all to the same routine. The child that likes to draw and possesses a talent therefor should be taught to draw, and not be irritated by attempted instruction in other things; and so of whatever talent the child may possess. The idea of the Craig Colony, with which the author is connected, is to put these children under right training, giving them constant employment along congenial lines, with slight changes of occupation, regular and wholesome diet, early hours, cheerful and healthful influences—in a word, good moral hygiene. Much tact is needed, for these children are sensitive and suspicious, superficial and disinclined to application; and even after learning to work fairly well they demand constant supervision.

Precocious Menstruation.

P. E. PLUMB (*New York Med. Jour.*, June 5, 1897) reports the following case: The child, born after an unusually easy labor, weighed nine pounds. Examination showed the external genitals to be of the size of those of a seven-year-old girl, while in form and development they were like those of a girl of fifteen; they were covered with dark brown curly hair. The clitoris, however, was hypertrophied, being one and a quarter inches long and about three lines in thickness, the prepuce extending about a third the length of the organ. The mammæ were an inch and a half in diameter, raised

about half an inch, and surmounted by nipples quarter of inch high. There was no hair in the axillæ; the head was covered with brown hair three or four inches in length. The facial expression was clearly feminine. On the following day it was observed that bathing the child's breasts caused erection of the nipples and of the clitoris. Manipulation of the nipples produced the same effects, and handling the clitoris alone caused erection of that organ; these phenomena were accompanied by every sign of sexual excitement. The child did well except that bathing, contact of clothing, etc., in the neighborhood of the clitoris caused what was apparently a complete orgasm, followed by a nervous and fretful condition. Six weeks later blood was found on the child's diapers, and examination showed that she was menstruating; the period lasted two and a half days; previously the child had not seemed quite well, and had cried when her breasts were touched. The discharge was twice examined microscopically but nothing could be found to show that it was more than a venous exudation. A few days later the clitoris was amputated, and since that time the periods of excitability have been only occasional and are becoming less and less frequent. The child is now ten months old, of distinctly feminine face and form, with firm mammæ and broad pelvis; she menstruates every six weeks for two days and a half; there has been no change in the microscopical character of the discharge.

Condensed Milk: Its Uses and Limitations in Infant Feeding.

CHARLES GILMORE KERLEY (*Medical News*, June 5, 1897) finds that condensed milk, as it is generally used, diluted to one in twelve, contains five-tenths per cent. of fat, six-tenths per cent. of proteids and four per cent. of sugar, the latter chiefly cane sugar; we readily see how little resemblance this bears to mother's milk. Nevertheless many children do comparatively well up to three months upon such a dilution; the sugar is in fair quantity, and it is a clinical fact that children require a smaller quantity of proteid in cow's milk than in mother's milk, though the former is of course more difficult to digest. After the age of three months the demand for larger quantities of fat and proteids is imperative. Of course we exceptionally see infants that thrive for a longer time on such a diet; in fact, upon vastly more injudicious feeding; but this does not prove the value of bad feeding; but simply the adaptability of the

particular child to unfavorable circumstances. Voluntarily, the author uses condensed milk in the case of a few infants, generally from two to ten weeks old, that must be bottle-fed, and that it is impossible to modify fresh milk for. For some reason some young babies do not assimilate the proteid of fresh cow's milk so well as that of condensed milk; and they will do well for six or eight weeks on a one to twelve dilution of condensed milk, preferably the unsweetened sort, after which time they can usually be put upon modified milk with a small proportion of proteids

It is necessary however to use condensed milk among the very poor, the ignorant, and those that are too careless to take the pains to feed their children properly. Being forced, then, to the use of condensed milk, how shall we use it to the best advantage? We must be guided by our formulæ, both of what the food is and of what it should be. We must supply the deficient fat and proteids; among the well-to-do we add cream in proper proportions; to dispensary patients we give cod-liver oil, from ten drops to a dessert-spoonful three or four times daily. The proteids we supply by the addition of meat broth. One pound of *lean* beef (any part of the animal will do) is boiled in one quart of water till the liquid is reduced to one pint; such a broth contains eight-tenths per cent. proteids. For a child three months old we may add one part of condensed milk to twelve parts of the broth; the mixture will contain five-tenths per cent. fat, one and four-tenths per cent. proteids and four per cent. sugar. At the sixth month we use one part of the milk to nine parts of the broth. In both cases fat is supplied by cod-liver oil. After the eighth or ninth month the critical period will have been passed, and we may allow barley and oatmeal gruel and other meal mixtures.

The Mouths of Our School Children.

CARL THEODORE GRAMM (*Columbus Med. Journal*, June 8, 1897) urges upon physicians the necessity of instructing parents and teachers in the care of children's mouths; and mentions, among the things permitted or caused by neglect of such oversight, the results of mouth breathing—congested lungs from the unfiltered air inhaled, contracted chests, stupid expressions, and depressed mental conditions; also the effects of uncared-for teeth, gastritis, stomatitis

and alveolar abscesses, and the actual loss of the teeth. All of these things might be easily avoided by a little knowledge and care; and the author thinks there should be a chair of oral pathology and hygiene in every medical and training school; public school teachers as well should be instructed in these matters; particularly should they discourage the use of second-hand chewing-gum among their pupils, and should avoid distributing day after day pencils and pen-holders to their classes, to be handled and mouthed by different children in succession.

Treatment of the New-Born Child.

W. H. WATKINS (*New Orleans Med. and Surg. Jour.*, June, 1897) makes a few homely suggestions concerning the care of infants just born. We should be careful to place the child so that there is no tension on the cord and where the maternal discharges cannot interfere with respiration; the child should lie on its right side to favor closure of the foramen ovale. We should have ready two portions of absorbent cotton in tepid water, one for the child's eyes and one for the nose and mouth. Silver nitrate for the eyes is not to be recommended in private practice unless we suspect gonorrhœa in the mother. The cord may be ligated as soon as respiration is established; the author thinks that nothing is gained by waiting for the cessation of pulsation in the cord. The best substance for ligatures is bobbin. Before ligating the cord it is well to strip it for a few inches; it should be tied far enough from the navel to permit a second ligation should that be necessary. The child should then be placed in the lap of an attendant and not left carelessly about where it is liable to be thrown on the floor in a blanket or sat upon. We should be careful that too great a change of temperature does not follow upon the child's intrauterine life. The vernix caseosa can be removed with absorbent cotton after anointing the child with fresh hog's lard. The first bath should be delayed for several hours, and when given should vary little from 90° F. The child should be dried without friction, and the funis dusted with ten per cent. aristol in borated talcum and wrapped in absorbent cotton; the bandage surrounding this should be elastic. Once the cord has fallen off the bandage should be permanently removed; and no skirt-band should be allowed to constrict chest or abdomen.

A Clinical Report of a Case of Infantile Scurvy.

D. J. MILTON MILLER (*Archiv. of Ped.*, July, 1897) reports the following case: The child, ten months old, brought up amid the most unfavorable hygienic surroundings, had been fed for the first three weeks on condensed milk, then for three weeks on boiled cow's milk; neither of these agreed, and the child had since been fed upon a moderately thick oatmeal gruel, sweetened with cane sugar, upon which it had done fairly well, though remaining undersized and thin. For three weeks however the child had cried when handled, and was fretful and refused food; and two weeks later swelling and bleeding of the gums was observed. Examination showed an undersized infant with flabby muscles; there was a slight rachitic rosary, distended abdomen and some epiphyseal enlargements. The four lower and four upper incisors were present; the gums over them were so swollen as almost to conceal the teeth, of a deep purple color, covered with extravasated blood, and bleeding at a touch. There was no swelling or enlargement of the lower extremities, but pressure on them seemed to give pain; there were no ecchymoses. The child was fretful and had an anxious expression; and suffered from anorexia, vomiting and constipation. A mixture of three ounces each of fresh cow's milk and lime-water was prescribed, with two teaspoonfuls of orange juice and one of fresh beef juice at the same interval.

The child, when seen six days later, was no better. The gums were much the same; the forearms from the middle third to the wrist were swollen and tender; both legs from a little below the knee down, including the ankle and dorsum of the foot, were much swollen and exceedingly tender; the skin over the swellings was glossy but not oedematous. It was found that the directions had been but indifferently carried out; this time there were ordered four ounces each of milk and barley water with one ounce of cream; orange juice, one-half ounce three times daily; and beef juice as before. The child when seen one month later presented no scorbutic symptoms, though still thin and anæmic; and it was learned that the improvement had been marked by the fifth day after the second visit.

One point of interest in this case was the food that caused it, a diet of oatmeal gruel having been noted in only one of the cases of infantile scurvy thus far reported. The case also reminds us of the

rarity of the disease among the dispensary class; for however ill these children are fed, at least their diet does not lack variety, and while it may produce rickets, marasmus or gastro-intestinal catarrh, does not cause scurvy. It is rather a disease of the well-to-do, who are either over-rigid and careful in their children's diet or use the more expensive patent foods, and for the former reason—an over-careful dietary—we also find the disease among children in institutions. As for the patent foods, their increasing use has gone hand in hand with the increasing frequency of the disease.

DENMARK.

Urticaria Chronica Infantum.

ERIK PONTOPPIDAN (*Hospitalstidende*, May 26, 1897) says that it is only recently that this disease has received much attention, Fox, of London, being the first to describe it definitely. During the five years from 1891 to 1895 twenty-nine cases have been observed by the author, out of a total of 2,604 skin diseases; and probably comparatively few cases of this disease come under the observation of the dermatologist. We find the disease most frequently in pretty well nourished children, sometimes a little anæmic or rachitic; and the history, often extending over several years, is of an itching eruption which has been worst in spring and summer but has rarely entirely disappeared. Examination shows a skin in general normal but with some scratch-marks, and presenting here and there partly urticaria-like, partly papular, efflorescences, sometimes tipped with a small vesicle; these are generally of some days' duration and leave behind a distinct infiltration. The favorite seat of the disease is the trunk, particularly the nates; then the extremities, where we may find quite large varicella-like vesicles. It is often difficult to distinguish this disease from scabies; the latter has a rather different localization; there will more often be other cases in the family, and moreover it would present much more serious primary and secondary eruptions after so long an existence. We must also exclude insect bites. In papular eczema we have a closer arrangement of the papules, with a tendency to the other forms of eczema and to considerable and more general infiltration of the skin; the same slighness of infiltration distinguishes the disease from prurigo;

while its chronicity would rule out erythema multiformis or varicella.

From common urticaria, characterized by its areas of simple localized œdema, this disease differs by the more violent and more vesicular nature of the exudation, often, too, mixed with blood, and by the following infiltration; nevertheless, it seems to belong under the head of urticaria, its peculiar form being due to the greater irritability of the tissue elements and their lesser resistance in children. The disease seems to be about equally frequent in boys and girls. Fox found the greatest number of cases during the first year of life, but of the author's series the greatest number were during the third and fourth years, though the disease had usually existed for a longer or shorter time; it is most frequent and most severe during the summer season. Dentition has been assigned as a cause, but seems to act only indirectly through the increased reflex excitability of that period, together with the frequent gastric disturbances. Rachitis has been very frequently observed, but not in sufficiently marked degree to warrant considering so common a disease as a cause. The same may be said of dilatation of the stomach. It appears to the author that overfeeding plays an important part in the ætiology; and in general he found the disease accompanied by enlargement of the stomach, inflated abdomen, coated tongue and irregular stools, and the children, while well nourished, pale, anæmic and nervous, as might be expected from dyspepsia and overfeeding. The evidence in this regard may appear somewhat one-sided from the fact that all the author's cases were among the children of the well-to-do; on the other hand, the author has been for twenty years consulting dermatologist to a children's home containing about one hundred inmates. Here the children are kept upon a simple and sufficient diet, but are not overfed, and their state of health is uncommonly good, while not a single case of urticaria has been observed. The author therefore concludes that the disease has its origin in an auto-infection from the products of fermentation in the intestinal canal; but, as not all children with digestive disturbances develop it, there must also be some predisposition, probably an over-irritability of the nerves and vessels of the skin; perhaps also there may be an over-production and secretion of uric acid. Probably also external favoring causes are insect bites, scratching, woollen underclothing and summer heat.

Regarding the prognosis, the disease, while chronic and not easily yielding to treatment, cannot be characterized as intractable. Moreover it generally disappears spontaneously at the second dentition; though it is a question whether, owing to the nervous irritability of the skin, the disease may not continue or, what is more likely, reappear as a common urticaria, or prurigo, or, more serious still, as Hebra's pruritus. Though the author has seen no such cases these possibilities must be borne in mind.

Treatment should first be directed toward remedying constitutional defects and intestinal disturbances; there will often be anæmia and rachitis, and phosphorus and iron should be prescribed; change of air, residence in the country, and, particularly sea baths are beneficial. The diet should be made simpler and more frugal, heavy meals should not be allowed late in the day, and the bowels should be kept regular with mild purgatives. Internally, the author has prescribed atropine at night, but he does not recommend it; two-grain doses of antipyrine have been suggested by some. The clothing should be cool and should not be of wool. Any soft powder may be used upon the skin. Daily warm baths, especially at night, seem to be irritating, and it is better to substitute cold baths with sea bathing in summer. A two-per-cent. solution of menthol in alcohol will often allay the itching. If the skin shows a tendency to an eczematous eruption we may use the usual remedies.

GREAT BRITAIN.

The Malignant Tumors of Infancy, Childhood and Youth.

W. R. WILLIAMS (*Lancet*, May 6, 1897) remarks the great frequency with which malignant neoplasms of the testis, especially those of early life, contain heterotopic elements; these tumors seem to arise from aberrant elements connected with "rests" of the Wolffian body, lodged in the rete testis. It is probable that the Wolffian tubules and the tubuli seminiferi join by the forward growth of the Wolffian tubules into the hilum; and at this stage fragments of the proto-vertebral matrix are dislocated and embedded in the evolving organs. These tumors are occasionally met with at birth and are sometimes bilateral; while they are often described as cancers, they are really almost always sarcomata. The author mentions a case of adeno-myxo-sarcoma of the left testicle in

a youth nineteen and a half years old, who died from acute dissemination of the disease sixteen days after castration, and in whom metastatic nodules were found in nearly all parts of the body. Sarcoma has also been found in children in the epididymis and in the spermatic cord.

The eye is the most frequent seat of malignant neoplasms in infancy; these are generally gliomata, but sarcomata are occasionally found; the former are peculiar to infancy, are sometimes congenital, and are rare after five years of age; metastases may occur. Besides, there are malignant neoplasms arising in the orbit which probably originate in association with foetal inclusions connected with the orbito-frontal fissure. Probably the ossifying and chondrifying tumors of the orbit reported originate in the same way. Cancer of the conjunctiva has also been met with.

Next to the eye, the kidney is the most usual seat of malignant disease in infants; these tumors are always sarcomata. The subject of their origin is still *sub judice*; in some cases they may be derived from "rests" of the Wolffian body or from separated fragments of the renal parenchyma; many times they are not improbably derived from suprarenal "rests." Renal sarcomata are frequently bilateral, multiple from the first, and congenital though generally first noticed in early infancy. The author notes a case of a different sort in a child two years old in whom the left kidney, itself healthy, was surrounded by a soft, ecchymosed, myxo-sarcomatous growth that seemed to have sprung from the peri-renal fat.

Malignant tumors, always sarcomata, of the suprarenals have been found in children but are very rare. Sarcomata are also occasionally met with in the bladder, the tumor usually assuming a polypoid form or being accompanied by a polypoid condition of the mucous membrane—a condition analagous to that which frequently occurs in the vagina. Rarely, also, sarcoma of the prostate may occur.

The reported cases of "cancer" of the lip in children and youths are doubtful; as are also those of epitheliomata of the tongue. Sarcomata of the tongue may occur very early, and may even be congenital. Myxo-sarcomatous polypoid growths may occur in the pharynx in youth. The cases of so-called cancer of the stomach in the young are very doubtful. Sarcomata (sometimes reported as cancers) of the small intestine, more rarely of the large intestine, occur in infants and children, and may be congenital.

Successful Removal of a Cystic Abdominal Tumor From a Child of Seven Months.

JOHN CAMPBELL (*British Med. Jour.*, May 15, 1897) reports what is probably the youngest case in which a cystic abdominal tumor has been removed. The child was delivered by high forceps after a difficult labor, but was apparently healthy till the age of four months when a swelling of the abdomen was noted which gradually increased and gave rise to attacks of colicky pain. The child came under observation at the age of seven months. The general nutrition was good; respiration was shallow; the abdomen was distended by a lobulated tumor, more prominent on the left side, hard above, soft and fluctuating below; the abdomen was dull on percussion except in the right hypochondriac region. The operation was done under chloroform; a median incision exposed a large tumor lying behind the posterior parietal peritonæum in front of the left kidney, pushing the intestines into the right hypochondrium. The cystic part was tapped and the whole mass enucleated from the sub-peritonæal tissue without bleeding. There was no pedicle but the tumor's firmest attachment was deep in the left side of the pelvis. The peritonæal covering of the tumor was attached to the edges of the lower end of the wound and the cavity packed with gauze; the upper end of the wound was closed, the peritonæum with silk, and the skin and aponeurosis with silkworm gut. The operation was well borne except for a few seconds during the extraction of the tumor. The subsequent history was uneventful; on the sixth day the gauze was removed and on the eleventh day the silkworm gut, the wound having healed except where the drain had been. The child was seen five months after operation and was in excellent health. The tumor weighed three pounds; its cystic portion contained about ten ounces of clear yellow fluid, and in the solid part a mass of cartilage and a piece of bone were embedded. There was nothing to indicate the organ from which it originated.

(A. D. CHAFFEE, New York.)

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THE MEDICAL TREATMENT OF PUERPERAL INFECTION.*

BY CHARLES JEWETT, M.D., BROOKLYN.

The limited time allotted to this paper will preclude more than a brief outline of the subject; and only the general plan of treatment can be considered. The special management of the various secondary manifestations must, for the most part, be omitted.

For the occurrence of sepsis in childbed the attending physician must usually hold himself to blame. Practically all the causes of infection are within control and puerperal sepsis is a preventable disease. Of first importance, therefore, is the

PROPHYLAXIS.

Immunity depends chiefly on the cleanly conduct of the lying-in. Yet the responsibilities of the obstetrician in the prevention of sepsis are by no means confined to an aseptic technique. Prophylaxis must begin many weeks before the labor. Conditions which predispose to septic infection should be recognized and as far as possible controlled. Examples are: debility, anæmia, syphilis, rheumatism, paludal poisoning, metallic impregnation and toxæmias of various forms. Park, in a suggestive chapter of his *Surgery by American Authors*, emphasizes the importance of auto-intoxication in its relation to microbic invasion. He calls attention to the fact that retained excrementitious material is among the most active

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predisposing causes of septic disease. In substance he says: "The various soluble ferments elaborated by certain glands may exert a deleterious influence both local and general. Biliary acids, if they do not find free escape, may give rise to fatal poisoning. So also leucin and tyrosin and all the excrementitious products which arise from insufficient liver activity are capable of producing forms of intoxication. Man is inhabited for nearly the whole length of his digestive tract by inferior and parasitic vegetable organisms. When some of their products is absorbed more or less poisoning is sure to ensue. An aqueous extract of fæcal matter is much more toxic than putrid matter. From these and other constantly menacing sources of self-intoxication, man escapes by virtue of his intestinal, cutaneous, pulmonary and renal emunctories. Especially important is the action of the kidneys. Auto-intoxication practically does not happen to those whose kidneys are working normally." Other conditions which tend to "disarm the organism against microbic invasion" might be named but space forbids.

Active cultures of the infecting agents may be present in the lower part of the birth-canal or in adjacent pelvic viscera before labor.

In diarrhœa and in neglected constipation the colon bacillus frequently becomes virulent, and it finds easy access to the obstetric wounds. Preëxisting disease of the bladder unrelieved may prove the source of dangerous infection in child-bed. The origin of puerperal fever is sometimes to be found in vaginal disease existing before labor. The physician should be assured of the condition of the vaginal secretion in the later weeks of gestation. A direct examination is not necessarily required. The presence of leucorrhœal discharges which are fetid, which stain the linen or excoriate the skin ought not to escape detection in a properly-taken history. Uncomplicated gonorrhœal poisoning seldom gives rise to fatal forms of puerperal fever. Yet the gonococcus lessens the normal acidity of the vaginal secretion and otherwise weakens the natural protective agencies against septic disease. A streptococcic is frequently associated with gonorrhœal infection. Chronic gonorrhœa, as Sânger has pointed out, is liable to acute exacerbations under the influence of pregnancy or the puerperal state.

A pathological secretion calls for treatment in advance of labor. Douching twice daily, for two or three weeks with a 1-5000 bichlo-

ride, or a two-per-cent. lactic acid solution is usually followed by marked improvement in the character of the secretion. Absorption of the mercurial is prevented by washing it out with plain water. Dusting the entire surface of the vagina freely once in two or three days with subnitrate of bismuth is sometimes effective. The surfaces should first be cleansed and well dried. The usual specific treatment should be carried out in the presence of gonorrhœa.

The importance of asepsis culminates at the labor. It is the opprobrium of general obstetrical practice that its septic mortality in child-bed remains undiminished. Obstetricians of special training have practically no death-rate in private practice. When child-bearing among the well-to-do shall in all cases be surrounded with the precautions observed by the modern surgeon in capital operations, the woman of wealth and fashion confined in her own home may be as fortunate as her pauper sister delivered in a hospital.

In health the vagina, in the absence of unclean contact, is free from pathogenic organisms. This is well established by the work of Krönig, Menge, and others. So far as disease-producing germs are concerned, the healthy vagina maintains its own antiseptis. The germ-destroying agencies, according to Menge, are the influence of the vaginal bacilli and their products, the action of the normal vaginal secretion, the leucocytes and the absence of oxygen. Vaginal douching during or after labor in conditions of health is therefore not only unnecessary but injurious. By diluting the vaginal secretion, by washing away and destroying the leucocytes and by impairing the secretory activity of the vaginal wall, it interrupts for many hours the action of the natural protective agencies. This applies in operative as well as in spontaneous deliveries.

At no time is the liability to infection greater than in the first few hours after the expulsion of the child. At this period the wound surfaces are wholly unprotected against absorption and the resistance of the tissues is at a minimum by reason of bruising and of local and general exhaustion. This is particularly true of the uterus which moreover is less perfectly drained than the lower portion of the parturient tract. Manipulation within the passages at the close of labor is especially dangerous. The introduction of the hand into the uterus is a risk to be avoided if possible. Even fragments of membrane which are wholly within the uterus are better left to be cast off spontaneously. While vaginal tears are best closed, the

advantage of suturing the cervix at this time is extremely doubtful, unless compelled by hæmorrhage.

CURATIVE TREATMENT.

Local Measures.—An essential preliminary to the local treatment is an accurate knowledge of the seat and character of the local lesions. A pelvic exploration should be made immediately there is reason to suspect the existence of infection. This should include a speculum examination of the vagina. It is a grave mistake to curette and douche the uterus when the disease is confined to the parts below it.

Septic vaginal wounds are to be cleansed once or twice daily and touched with tincture of iodine, or with a fifty-per-cent. carbolic or chloride of zinc solution. They may then be dusted with iodoform or a strip of iodoform gauze may be left in the vagina to keep the walls apart. Lacerations extending into the broad ligament should be cleared of blood-clots and packed with iodoform gauze.

Vaginal douching is useful in the presence of foul discharges. An antiseptic is more effectual than a plain injection in destroying the soil in which the germs thrive. It is not expected to act as a germicide in the tissues. To a mild non-toxic antiseptic there can be no objection, if properly used. The peroxide of hydrogen or a 1 in 10 Labarraque solution is suitable. Douches, however, ought to be given only by the physician and with all the care observed in a major surgical operation.

A question requiring much tact and judgment is the treatment of the uterine cavity. No active interference within the uterus should be undertaken till assured that it is involved in the septic process. Tardy involution and an abnormally gaping cervix are presumptive evidence of a septic or putrid endometritis. The cavity should be explored. The most definite information is afforded by the fingers in the uterus. It is difficult, however, to render the hand aseptic, to say nothing of the risk of carrying infectious material from the vagina. To the trained hand the dull curette is almost equally satisfactory as a means of exploration and is safer. With this it is generally possible to determine the presence or absence of necrotic material. Large fragments of secundines can be felt and small loose shreds brought away without injuring the endometrium.

The odor of the uterine lochia can be learned from what clings to the curette. A few drops of the lochia may be taken for bacteriological examination. The presence of decomposing blood-clots or of fragments of placenta or membranes calls for the immediate and complete evacuation of the cavity. For this purpose the curette is cleaner than the finger and is at least equally efficient. To the sharp curette it is objected that it dislodges thrombi from the openings of the veins at the placental site and breaks down the granulation zone. But veins and lymphatics are laid open by the dull curette and the tissues are more deeply bruised by the greater pressure required. For the writer the choice lies with the sharp instrument.

A special small curette in addition to the larger one is useful for clearing out the cornua. The uterus should be well washed out before and after curetting best with a non-toxic disinfectant. Notwithstanding the fact that the germicidal effect of the irrigant, as Bumm has shown, does not extend into the tissues, a suitable antiseptic has the advantage that it destroys putrid and putrescible fluids in the uterus.

While the curette and the douche rationally employed are valuable resources in the treatment of puerperal septic endometritis their empirical use as routine measures has doubtless done incalculable harm. Even when clearly demanded, a curetting is not to be lightly undertaken by men wholly untrained in surgical work.

Extension to the para- or perimetrium does not, in the writer's judgment, forbid intrauterine measures; it rather demands the more urgently that the primary focus of infection be abated.

In the absence of débris in the uterine cavity the curette is contra-indicated. In purely septic, as distinguished from sapræmic infection of the endometrium, painting the entire cavity of the uterus with tincture of iodine, or with a fifty-per-cent. carbolic or iodized phenol solution has in many cases in the writer's hands done good service. The uterus is first washed out by prolonged irrigation with a normal salt solution or with a mild antiseptic. Finally a loose packing of iodoform gauze is left in the cavity to be removed in twenty-four hours. There is a reasonable suspicion, however, that the good effects of the gauze dressing are due more to the iodoform than to the gauze. I have frequently substituted iodoform crayons for the gauze with the effect in numerous instances of a

steadily falling temperature. The crayons contain each 10 grains of iodoform in an excipient of glycerine and gum tragacanth. From two to six pencils are placed at the fundus.

The foregoing methods may be expected to yield satisfactory results in most cases in which the infecting organisms are of slight virulence. In virulent forms of infection little or no benefit is to be derived from local measures. By the time the indication for treatment presents the offending germs have passed beyond the reach of curette and douche.

Intra-uterine irrigation is of little value except to wash away dead animal matter lying free in the uterine cavity. Its action is for the most part mechanical and accordingly plain boiled water or salt solution is preferred by many writers to active chemical agents. Dangerous accidents, too, are possible from the use of strong chemical solutions. Yet a non-toxic antiseptic, as for example, Labarraque's solution, 1-10, or peroxide of hydrogen is practically harmless and it more effectually destroys septic lochia. Tarnier recommends iodine water as the best irrigant. Repeated douching is frequently injurious. It is permissible only so long as the temperature falls after it.

As bearing on the value of curettage and douching, the statistics of Pinard may be cited:

In the Maternité de Lariboisiere, '83-'89, and the Clinique Baudelocque, '89-'94, there were 63 septic deaths in 13,835 confinements.

Under the use of intra-uterine irrigation and curettage, separately or combined, the death rate steadily fell to .79 per cent. in 1885 and to .27 per cent. in 1892, rising again to .42 per cent. in 1893. The curettage was done with curette or fingers. The irrigant was a 1-4000 biniodide of mercury solution at 45° to 48° C. Albuminuric cases were included. The curetting was done without anæsthetic and without a speculum.

In 1894 there were 123 cases of infection in 2,139 women. Of 85 treated by irrigation all recovered. Of 38 cases in which curettage was practiced four died.

Much difference of opinion, however, obtains with reference to the utility of curetting and douching and numerous other plans of dealing with a septic endometrium have been proposed.

Carossa, of Bavaria, places a soft drainage tube in the uterus, and, about this as a center packs loosely with absorbent gauze. A

rubber tube and funnel are attached to the drain and every four hours about eight ounces of 20 per cent. to 25 per cent. alcohol are slowly passed through the funnel. His results I am not able to state.

Hauber swabs the uterine cavity with absolute alcohol and then with a 50 per cent. chloride of zinc solution and irrigates with a 5 per cent lysol injection. Of 11 cases so treated 10 recovered.

Kahn reports excellent results in 9 cases of puerperal endometritis treated with intra-uterine injections of steam. The uterus is first cleared of blood-clots and remnants of secundines by means of the curette or fingers. The steam is injected through a perforated metal tube which is introduced into the uterus. The tube is passed through a canula which serves as a guard to the vagina and vulva. Steam at a temperature of 100° C. is used for two minutes, when the temperature is raised to 115° C. and allowed to act for fifteen seconds. According to Kahn, no reflex disturbance and little pain or discomfort follow. The steam is an effective germicide, the blood and lymph channels are effectually closed by albuminous coagulation and a protective coating is formed over the new granulation tissue.

Saft believes the best results are obtained by withholding all local treatment and giving attention merely to diet and cardiac stimulation.

Systemic Treatment.—In all septic disease there is present a greater or less degree of systemic intoxication. General measures are indicated not only to combat the constitutional effects of the poison but to control the local septic process as well. Here the rôle of the doctor, as Robin puts it, is "to exalt vitality, increase the energy of vital reactions and improve the soil in which the parasites grow." Alcoholic stimulants, tonics, alimentation, eliminants and certain measures addressed directly to the microbic factors of the disease constitute the systemic treatment. Alcohol, to realize its best effects, should be pushed to the point of intoxication. The maximum daily dose may be a quart of brandy daily or its equivalent. Whisky, brandy and the wines should be used in alternation. Alcoholics unfortunately are not well borne by all patients, and the limit of stomach tolerance frequently falls short of the foregoing dosage.

Tonics help to hinder waste and to promote oxidation of the toxins

and the products of tissue disintegration. Most useful are strychnine and quinine, especially the former. Strychnine may be given in doses of 1-30 grain from three to six times daily according to the degree of exhaustion and the tolerance of the patient. Quinine is of value in tonic doses of at most three or four grains every six to eight hours. In large antipyretic doses it is injurious by hindering oxidation. Sparteine, caffeine and other similar agents are frequently of service in heart depression for maintaining the energy of the circulation.

Feeding must be limited to liquid foods given in small quantities and often. Milk and bouillon are suitable. Predigestion is often required. The quantity should be governed by the ability of the patient to assimilate.

All measures tending to promote elimination of the disease-products should be utilized. Water drunk as freely as can be borne and abundance of pure air help to this end. Willischanin has shown by experiments on animals that the quantity of septic poison required to intoxicate is doubled or tripled when the animal drinks abundantly. Mildly alkaline waters are useful. The alkalies are believed to facilitate the combustion of organic substances in the blood. Diuretic drugs and warm drinks for their diuretic effect may obviously be of service. The judicious employment of saline purgatives has a rational therapeutic basis as an eliminant. Pure air is an important factor in the eliminative process.

To limit the diffusion of the poison from the primary focus in the uterus Bumm and Williams advocate the use of ergot.

Ressemann and Kezmarszky have reported four cases in which intravenous injections of 1 to 5 milligrams of mercuric bichloride daily were followed by recovery. This practice will hardly commend itself to general adoption. Saturation sufficient to kill the disease-germs must be destructive to the cellular elements of the blood and the tissues.

In two cases Tarnier produced abscesses by the subcutaneous injection of a drachm of oil of turpentine as proposed by Fochier. Both died.

Antipyretics.—The symptomatic treatment of fever is much abused. The coal tar antipyretics are not only powerful depressants but as Robin declares they hinder the elimination of the microbic poisons and the products of tissue disintegration by hindering their

oxidation. Quinine in antipyretic doses acts in like manner. Cold bathing on the other hand if judiciously employed has the effect of a nerve tonic; it increases oxidation and favors elimination. The liberal use of cool drinks is helpful for reducing temperature as well as by promoting disintoxication. Cold sponging is indicated when the temperature is 102° F. or higher. The circulation is maintained by friction and by warm applications to the extremities. In profound depression of the vital powers refrigerant measures are obviously contra-indicated.

The serum treatment of puerperal sepsis is still under trial. Its statistics thus far are not conclusive. While the organism most constantly found is a streptococcus, puerperal infection is frequently a mixed infection or may be due solely to other organisms. Yet in many of the reported cases in which antistreptococcic serum has been used there was no bacteriological diagnosis. The quality of the serum employed in some instances is open to question. No definite standard of strength has been adopted, and the treatment in many cases was not begun till late in the disease. There is nothing to show that the favorable results have not been due to other measures which were carried out at the same time with the serum treatment.

My own experience is limited to six cases. In only one was any improvement noted, and in that it was possibly not due to the treatment. This woman's temperature fell progressively for several days under the serum injections, but she became profoundly exhausted and died abruptly.

In erysipelas the results with antistreptococcic serum have been apparently encouraging. In pure streptococcus infection in child-bed, if the diagnosis is possible, serum therapy is perhaps worthy of further trial.

In but few instances have injurious effects been noted. Yet the case of Bar and Tissier, that of Gaulard and another recently published by Baldy give rise to reasonable doubt as to the safety of the antistreptococcic serum injections. Chills sometimes ensue and extreme depression has followed for several hours. Care at least should be taken that a reliable preparation is obtained. It is essential not only that it be carefully prepared but that it be fresh, since it loses its power by long keeping.

The dose employed has varied from 10 to 120 cc. per day. The

injections should be given aseptically into the subcutaneous cellular tissues, and their use should be begun at the inception of the disease.

Inoculation experiments in the treatment of malignant growths recently reported by Petruschky (*Zeits. f. Hyg. und Infektionskrankh.* B. XXXIII. H.3) throw grave doubt on the value of anti-streptococcic serum. One woman was inoculated with streptococci eleven times at intervals of one or two weeks. Typical erysipelas resulted every time, proving that no immunity had been established. Streptococcic inoculation promptly produces erysipelas, notwithstanding previous attempts at immunization with antistreptococcic serum. Petruschky justly says if the serum has no protective it certainly has no curative power.

Bar and Tissier state that only poor results were obtained even when the serum was used immediately after artificial infection.

Neufeld, testing blood-serum from a case of recovery from streptococcus septicæmia, showed that this produced no immunity against a subsequent infection.

Nuclein has recently been brought to notice for the treatment of sepsis. Hirst's experience leads him to think it promises better results than does serum therapy. It acts as a leucocytotic, and is believed to intensify the germicidal properties of the blood.

In three cases in which I have used nuclein injections no definite results could be claimed for it. The dose employed was 30 minims of yeast nuclein (Parke, Davis & Co.) every four hours given subcutaneously. Kalish, of New York, and Leedom, of Philadelphia, supply a stronger preparation from animal sources, the dose of which is from 1 to 3 minims. Either preparation may be given by the stomach, but larger doses are required and absorption is less certain.

No important ill effects have been observed from the use of nuclein, and the favorable reports recently published by Courtney and others commend it to more extensive trial.

Lavage of the blood or the tissues by means of hypodermic injections of the normal salt solution or of Hayem's solution (sodic chloride 5 iss, sodic sulphate 5 iiss, water Oii.) is rational in theory but has thus far proved of little practical value.

In conclusion it must be admitted that while much has been accomplished within recent years for prevention, comparatively little has been added to our medical resources for the cure of puerperal septic disease.

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THE SURGICAL TREATMENT OF THE PUERPERAL SEPTIC DISEASES.*

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Prefatory to consideration of the measures by means of which surgery attempts the cure of the puerperal septic diseases, it will be useful to summarize in brief the present state of our knowledge in regard to the causes and the sources of this infection. The general adoption of the view that puerperal infection is simply wound infection has greatly simplified our topic and has led to surgical principles differing in nowise from those which apply to parts of the body other than the genital system and which are applicable to this apart from the puerperal state. To-day we believe that puerperal infection is dependent either on toxins or on pathogenic germs. We recognize a putrid infection (so-called sapremia) and septicemia. The former is dependent as first cause on non-pathogenic germs, the latter on pathogenic. The non-pathogenic microbes or saprophytes, in process of growth form the ptomains and the leucomains which are the associates of putrefaction. These elements of putrefaction tend to remain localized at the site of their origin, and for this reason sapremia treated early and properly ordinarily may be controlled. Septicemia, on the other hand, is dependent on the growth of pathogenic microbes—the strepto- and the staphylococci, whose powers of multiplication are extraordinary, whose dissemination through venous and lymphatic systems is rapid in the extreme, and, therefore, in case of septicemia we deal from a surgical standpoint not alone with local infection but also with systemic. Further still, a sapremia, through neglect or improper treatment, may pass into a septicemia.

From what has preceded it is evident how essential it is preparatory to the institution of surgical measures to determine at the very start of wound infection whether we are dealing with sapremia or with septicemia.

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The essential facts I have noted, if borne in mind, justify the surgical procedures I proceed to describe.

The commonest form of wound infection is sapremia, and the site of localization is the uterine cavity. The surgical measure in vogue to-day is curettage, and I am satisfied that this procedure is much abused—resorted to unnecessarily and to the detriment of the patient. I myself in the past have been a culprit—indeed, it is partly as the result of my personal experience that I am able to make this statement. Even as formerly it was the custom to repeatedly douch the uterus on the intercurrent of symptoms incompatible with the normal puerperium, so to-day the first impulse of many is to curette. In sapremic endometritis the curette is a valuable instrument, but, in case of endometritis due to the presence of pathogenic microbes resort to the instrument leads to the dissemination of these microbes throughout the body. The reason for this view is the following: The careful researches of German colleagues in particular have shown that underlying the putrescent mass in the uterine cavity Nature throws out a granulation bed of leucocytes which opposes a barrier to whatever microbes are endeavoring to enter the system through the lymphatics and the veins. If we break down this barrier with our curette local infection becomes general infection. It is recognized that in so far as septic phenomena remain localized in the puerperal state in so far does the woman stand chance of recovery. Our aim then in the treatment of septic puerperal conditions is to favor localization and to operate where the need appears before systemic infection is marked. Now the varieties of puerperal endometritis recognized are the putrid and the septic, and they differ locally, in that in the former the granulation barrier forms, while in the latter, if present at all, it is extremely thin. While these two forms of endometritis may be combined, as a rule, nowadays, when aseptic midwifery prevails, putrid endometritis becomes septic only when there has been some error in technique at the time of delivery or during the puerperium. It is, therefore, possible in the majority of cases to differentiate early enough to be of benefit the form of endometritis which exists. This differentiation is accomplished under anæsthesia and perfect asepsis by exploring the uterine cavity with the fingers, and such should be the rule prior to curettage. If the examination reveals putrid remnants of placenta, decidual débris or secundines, the curette should

be used. If, on the contrary, we find no such remnants then the curette is contra-indicated. The instrument, when used under the limitations mentioned, should remove only the putrid masses and the softened necrotic decidua. We desire to work down only to the granulation layer and the degree of force requisite is simply a question of educated touch. The uterine cavity having been cleansed as far as the granulation zone, it is irrigated freely and filled with sterile gauze. This gauze is not inserted with the idea of drainage chiefly in mind, but rather with the object of keeping the cavity open for further inspection or treatment, should such prove requisite. I favor its removal at the end of about thirty hours, when, if the subjective symptoms have not improved or the local findings are aggravated, the chances are we are dealing with a septic form of endometritis and then the less we do of an active nature the better. In short, we then limit ourselves to such local treatment as will kill the germs at work on the surface of the uterine cavity in the hope that wider dissemination will not occur. It may be noted that I reject iodoform gauze as the packing material, and this for the reason that not infrequently iodoform toxemia sets in, and this, through aggravation of the symptomatology, leads us to think that, notwithstanding thorough cleansing of the uterine cavity, sapremia has merged into septicemia. As for the choice of curette, whether dull or sharp, all depends on the operator. The dull curette I think will remove the necrotic decidua down to the granulation zone as readily as the sharp, only more force must be used. Either instrument in the hands of the careless may perforate the organ.

In the septic variety of endometritis, examination of the interior of the uterus under anæsthesia and perfect asepsis will not reveal putrid remnants unless indeed the sapremic form enters in combination. As a rule, in the septic form, the less we do of an active nature the better. Quickly enough of their own accord will the pathogenic microbes gain entrance to the general system, and our aim is to kill them if possible while they are only active in the uterus. Irrigation at intervals with bichloride solution may be effective but my preference after one irrigation is the packing of the cavity with sterile gauze soaked in alcohol. We recognize in this agent the best of all bactericides, and its action extends beyond the superficies and therefore may render inert the germs which are active in the uterine musculature. It should be remembered that the

septic form of endometritis is that which, if not limited, leads to septic metritis, salpingitis and peritonitis, and therefore our policy, to repeat, should be to aid Nature in her efforts at localization and not, through over action, lead to dissemination of the microbes. The time limit imposed and the fact that there are other topics to be considered has enabled me only to skim along the surface, as it were, of this unsettled and highly important subject of the use of the curette. My leading thought has been the absolute necessity of differentiating the type of endometritis as far as this is possible before resorting to curettage, and the harmfulness which may follow its *blind* use.

Our next topic is the surgical treatment applicable to puerperal septicemia when it has passed local bounds and involves the entire uterus, the tubes and ovaries and the peritonæum. In considering these affections from the surgical side the difficulty which offers is not so much *how* to operate as *when*. The advances in abdominal and in pelvic surgery made irrespective of the puerperal state apply with equal force to similar conditions occurring in this state. The technique of operation is the same in diseases of the appendages, for instance, where puerperal sepsis does not enter as a factor as when it does, and peritonitis, local and general, is attacked surgically after the same fashion in both instances. There is a vast difference, however, in symptomatology and in prognosis, pointing to and following operation in the one over the other, and this difference, it appears to me, may be well stated as due to a *puerperal influence*. When we recall how rapid is the retrograde metamorphosis occurring in the system of the puerpera under normal conditions and when we remember the general hypertrophy and the congestion throughout the entire organism associated with pregnancy, it is easy to understand why, on the intercurrent of septic infection, symptomatology is modified, is exaggerated, and thence the difficulty in decision as to *when* operation of a major type is indicated and as to *when* it is wise to stay the hand. When we err I believe it is through withholding surgery too long, and yet we all have seen most desperate cases recover without surgery where the impulse has over and again been strong to operate. The great aim in the presence of the septic puerperal diseases is to act before systemic infection is deep. When veins are clogged with septic thrombi, when kidneys, liver, spleen, heart and brain have been invaded by cocci distributed through

lymphatic or from vein the operation avails but little even though thereby the initial lesion of the septic infection be removed. Settled then in many respects as are the indications for operation on the uterus, tubes, ovaries and peritonæum apart from the puerperal state, similar affections are so modified by the puerperal influence, as I venture to term it, that he is a rash man indeed who makes the assertion that in the presence of this or that group of symptoms, local and general, one or another operation is always indicated. Indeed, in puerperal surgery he is the best judge who for years has studied the manifold phenomena, normal and abnormal, of the puerperium and not the man who poses as general surgeon or pure gynecologist—if indeed such a rare bird exists nowadays.

To exemplify the truth of these statements let us consider in turn the various puerperal septic conditions the differentiation of which oftentimes appears so simple as we read the books, and yet how different at the bedside!

I shall not trespass long on your time in considering the surgical treatment of local peritonitis and of so-called cellulitis. As a rule, these conditions are benign as regards life while they remain localized and where the watchful attendant recognizes the time for action. Often, under routine non-surgical measures these exudates disappear. The point to remember is that where the symptomatology becomes aggravated notwithstanding such measures the plastic peritonitis or the cellulitis is probably becoming purulent, when, should expectancy rule, general systemic infection may ensue with burrowing of pus until the pelvic organs become, as it were, riddled or else rupture into the general peritonæal cavity occurs with consequent general septic peritonitis. In protracted cases, therefore, and in cases where the symptomatology remains acute for days or takes on the low grade type so ominous of deepening systemic infection the rule should be to anæsthetize, determine the localization of the purulent foci, and at once incise and drain in accordance with surgical rule at the most accessible point—be this in the vagina or above Poupart's ligament. It should be borne in mind that local peritonitis when suppuration sets in is in reality extra-peritonæal, and, therefore, unless the general peritonæal cavity has become secondarily infected our surgical measures do not concern it. Where the local peritonitis is associated with or merges into a metritis and salpingo-oöphoritis—a rare type nowadays—early recognition and very

prompt and radical surgery is requisite to save life. If the general peritonæal cavity be walled off by a roof of exudate it may become a question of thorough drainage of the pelvis through removal of uterus *per vaginam* as well as of free incision and drainage of the multiple abscesses which riddle the pelvis. In my experience, however, such extreme suppuration is associated with deep systemic infection, and the woman who has drifted into such state dies notwithstanding operation because of the multiple septic foci which are found post-mortem throughout the body. The burning question of the hour, indeed, is how to determine at an early enough stage for surgery to be efficient the existence of such a high grade metritis as calls for hysterectomy. At the present I cannot answer this question although I have read learned discussions where the uterus is referred to as having been riddled with multiple abscesses and although here and there I find on record instances which have recovered after hysterectomy. Remember that I have in view now only instances of this type occurring within the limits of the puerperal state. If the woman can live for a couple of weeks or longer with her pelvic organs in the condition I have noted, either the septic germs in the system at large have lost their virulence or else they never wandered far from local bounds. I well recall over six years ago the fight I had over a woman whose pelvis was riddled with abscesses so that drainage was established not alone through the vaginal fornices but also in and through the uterus and downwards from above Poupart's ligament. Clinically there was accompanying evidence of general peritonæal infection and had I been imbued with the extremely advanced, and possibly to be proven correct, views of some of my colleagues I would unquestionably have resorted to hysterectomy. This woman, however, threw off the sepsis, and two to three years thereafter the colleague with whom I saw the case delivered her of a live child at term. Here, notwithstanding infection of the uterus with multiple abscesses, not alone in the organ itself but also throughout the entire surroundings, and notwithstanding clinical features of general peritonitis, the tubes and ovaries were nevertheless not radically affected, and the uterus after all proved a useful organ. One phase of the difficulty in decision, therefore, is the fact that a clinical picture which would seem to demand hysterectomy has over and again been proved fallacious. If to-day we were in a position to state that a given case of septic en-

dometritis, for example, was going to merge into septic metritis with its sequelæ then the doctrine should be to take out that uterus while the infection is localized in the endometrium. But as far as I can determine no man can make such statement and our policy—regrettable as infrequently it turns out to be—must be as yet to treat surgically each complicating factor as it arises in the hope that general systemic infection, should it ensue, may not be of that virulent type which kills notwithstanding surgery or else that the woman can be tided over the acute stage until, the system having become habituated to the sepsis or its virulence having become attenuated, the case either progresses to symptomatic cure or definite evidence is secured that nothing short of complete extirpation will accomplish even this.

The next topic I consider—general septic peritonitis—may well be termed the *bête noir* of the surgeon. Particularly is this the case when it complicates the puerperal state. While, irrespective of this state, instances presumably of this type have been recorded where cure has followed radical and prompt surgery associated with the injection of the antitoxic serum, I do not believe that a well-authenticated instance complicating the puerperal state has been noted. Likely enough that influence which I have called the puerperal for want of a better term modifies the prognosis for the worst, but, whatever the case, when the puerpera falls a prey to this type of peritonitis no matter how prompt the surgeon, no matter how free his incisions, irrigations and drainage, she dies. The virulent agent—the streptococcus, rapidly enters the system at large and paralyzes vitality often before marked change may be noted in the peritonæal cavity. As a rule general septic peritonitis is consecutive to septic metritis or to perforation into the cavity of septic pus. The symptomatology of this type of peritonitis is highly suggestive. Deep and rapid systemic infection arising from peritonitis of this septic nature affects very rapidly the nerve centers, the pulse is rapid, the temperature is depressed, the abdomen is often flat. The best that surgery can offer is multiple incision, free irrigation, and, if found affected, extirpation of tubes and uterus and ovaries. I make the latter point because in the worst case of this character upon which I have operated the uterus and appendages were normal to the touch and the sight, the infection having traveled from a neglected sloughing laceration in the pelvic floor. Other

varieties of peritonitis, however, may complicate the puerperal state which do not carry by any means the gloomy prognosis just stated for the septic type. The exudative or plastic type is more frequently met with nowadays than the diffuse septic, and this is the variety of peritonitis which recovered formerly under large doses of opium—a drug which to-day has its sphere of great usefulness under the same conditions. Surgery in the plastic or exudative type of peritonitis is not called for unless pus cavities form at one or many points of the peritonæal cavity. These are the instances which have been mistakenly called cases of general septic peritonitis and where cures have been noted through surgical intervention. Erroneously so, however, for careful search will show that a greater or less portion of the peritonæal cavity is free from infection, and so long as such is the case the woman has chance of recovery. When the exudative type goes on to the formation of encapsulated pus pockets the best that the surgeon can do is to open and drain as he discovers them, never forgetting that Nature's method of drainage—that is to say down-hill, should be followed whenever feasible. Thus it is not sufficient to open into the encapsulated pus-pocket, wash it out with one or another agent and stuff it with gauze, but, as a rule, it will be found possible to carry the drain either down into the vagina or else backward through the loin.

Incidentally, above I have referred to infection of the peritonæal cavity through the breaking of abscesses originating apart from the sexual system, and I had in mind chiefly the vermiform appendix. Such an occurrence is purely an epiphenomenon in the puerperal state and calls for operation such as is indicated apart from this state. Further still during the course of a smooth puerperium an ovarian abscess or a pyosalpinx antedating labor may rupture, in which event the surgery indicated is purely that which would control a similar catastrophe apart from the puerperal state, that is to say abdominal or vaginal incision and extirpation of the offending organ. These topics, however, are extraneous to the discussion.

In presenting this subject to you after this hurried fashion I have avoided entering into details of surgical technique, because I have thought that our time might be utilized to better advantage in the inquiry as to when we should operate. My line of thought I have aimed at making suggestive so as to elicit that difference of opinion which, necessarily, is associated with discussion of unsettled

questions and which, ultimately, may lead to the adoption of cardinal views the acceptance of which will enable us to operate at a stage precedent to general septic infection whereby the relatively few puerpera we now lose may be saved.

DIGITAL EXAMINATION OF THE UTERINE CAVITY FOR DIAGNOSTIC PURPOSES.*

BY H. BANGA, M.D., CHICAGO, ILL.

While begging your attention to a few words on digital examination of the uterine cavity for diagnostic purposes, I am well aware that I am not going to say anything which is new in itself. Yet my remarks will touch upon one of those little things about which it may be profitable to the practitioner, once in a while, to refresh his memory.

For two reasons, as I see it, do the majority of gynæcologists not practice digital examination of the uterine cavity as frequently as they should: *First*, because many consider the procedure tedious, difficult and only applicable in puerperal or multiparous patients; *second*, because they think the sound and the curette, with the aid of the microscope, will furnish, with much less trouble and in a more scientific way, all the information needed to properly diagnose any uterine trouble. I, therefore, shall treat my subject with a view of demonstrating both: how easily dilatation may be obtained even in nulliparous women, and how far superior in intra-uterine diagnosis the finger may be to the sound, the curette, or even the microscope.

I consider the tent to be the best dilator. Its chief advantage over rapid dilatation by means of Goodell's or Ellinger's dilator, Hegar's bougies or incisions lies in this, that it produces a uniform, circular widening of the whole cervical canal, as well as a peculiar softening of the cervix somewhat similar to its softness in the pregnant state. Both these conditions naturally facilitate the passage of the finger. It is true, the tent requires more time for its action,

* Read before the Chicago Gynæcological Society, September 17, 1897.

but since the cases in question are invariably not urgent, I would dismiss this objection altogether.

I prefer the laminaria tent because it expands more than the tupelo or slippery-elm tent and because it is more easily kept aseptic than the sponge tent. It is armed with a loop of strong silk carried through its centre and should be sterilized in dry heat and kept ready in a glass bottle or in a solution of iodoform in ether and alcohol.

In using it I proceed in the following manner: In the afternoon preceding the day set for the examination I begin preparing the patient by thoroughly cleansing the outer genitals and vagina in the usual way with green soap and corrosive sublimate. Having once more ascertained the position of the fundus bimanually or with the sound and while the patient is in the dorsal position, I expose the cervix in a Sims speculum, catch the anterior lip with a volsella, pick up the tent with a dressing forceps or two fingers and shove it through the os into the uterus so that the threaded end remains visible in the external os. The introduction is most satisfactory if you get the feeling of passing through a tight channel, *i. e.*, if the tent fills out the cervical canal or rather the inner os, for this is invariably the most narrow place and the one really requiring dilatation. In most cases the pulling down of the uterus toward the outlet straightens the cervical canal or rather the whole uterus so that even in case of pronounced flexion there is hardly any possibility left for the tent becoming stuck or for perforation of the uterus. After a little experience one will learn to select the proper size of tent and to judge also of the amount of pressure admissible to pass the inner os. In the beginning it may be well to find the size of tent needed by trying Hegar's bougies. This will prevent also unnecessary spoiling of tents found to be either too small or too large.

After the insertion a plug of sterilized gauze is placed against the os to secure the position of the tent.

Sometimes the cervical canal seems so slippery even if you get the tight feeling mentioned above that the tent slides out as soon as the forceps or the finger lets go. In such a case I have found an advantage in pushing the tent into the uterine cavity altogether or at least so deep in that its threaded end is no longer visible. It then stays in place and will do its work at the inner os, where, as stated before, the difficulty to be overcome is really located, the external os being sufficiently stretched while the tent is drawn out. Perfect rest

in the recumbent posture is enjoined upon the patient as long as the tent is *in situ*.

One or two hours after the introduction the patient notices drawing, bearing-down pains in the lower region of the abdomen. Those who know will describe them as regular labor pains. They last from six to twelve hours, may disturb the night's rest, but are hardly ever excessive enough to require an anodyne. If the patient has no pain at all you may safely suspect that the tent has slipped out of the cervical canal, and an inspection to that end should be made about four or six hours after the introduction of the tent.

The next day the tent is removed. If it is swollen in its entirety the dilatation will be found perfect. A ring-like depression shows the amount of resistance offered by the inner os. If the depression is slight the finger will gradually overcome the obstacle and pass the inner os. In case, however, it is deep, showing that on this spot the tent has expanded but little, it is best to insert a larger size or two or three small ones and postpone the operation until the following day.

Being satisfied that the cervix is ready for the finger the patient is anesthetized. Next, the vagina is again thoroughly cleansed and the bladder emptied. Then *two* fingers are introduced—the *longer* middle finger to explore the uterus, the *index* in order to assist the outer hand in steadying the uterus. Steadying the uterus means grasping the fundus with the right hand. If the patient is not too fleshy, the bowels not distended, and the recti muscles not too stiff, I have rarely failed to so grasp the fundus that the act of pushing the finger into the uterine cavity resembles very much the manipulation of getting a tight glove over the finger: from below the finger, by careful boring movements, tries to get in while the fundus is pushed from above down over it as it gradually advances. When the uterus cannot be grasped the anterior or posterior lip or both are caught by a volsella and the uterus is drawn down while the finger is inserted. Here, however, one will often be disappointed, the finger proving too short to reach the fundus or even to get in halfway.

Now, what can we recognize with the finger? Let us first consider *puerperal cases*. Here occasionally the question arises whether the uterus be empty or whether it still contains the ovum or parts of it. The finger will of course at once remove any doubt, while

the sound or curette may utterly deceive us. I had a striking case of this kind in my service at the Michigan Reese Hospital. A woman was curetted for irregular hæmorrhages, apparently due to a miscarriage, which occurred, according to the history, three months before after three months' pregnancy. The woman was in good general health, the womb slightly enlarged, subinvolved, as we thought. My assistant did the curetting, producing lots of shreds of decidua. I finally took the curette in my own hand to satisfy myself that the uterine cavity was smooth. I removed a few more shreds and then quit, thinking the operation had been well done. While cleansing the vagina I noticed a shred hanging out from the os. I picked it up with a forceps, and was quite astonished to see an entire macerated dry foetus, over one inch long, slipping out of the uterus. After this quite a piece of membrane followed. While working with the curette neither my assistant nor I had the slightest sensation of the presence of such a bulky foreign body within the uterine cavity.

Loose pieces of *débris* may be scooped out with the finger at once, firm ones may be detached with the nail or if this be not feasible left to the curette. In which case the curetting is not a blind poking around in the uterus but you carry the instrument directly to where the finger has located the remnant of after-birth or secundines, be it forward or backward, at the top or near the cornu. The finger directly controls the work of the curette, and you stop scraping only after having repeatedly ascertained by feeling with the finger that no foreign substance be left in the uterus.

Next, we consider *non-puerperal cases* commonly thrown together under the head of endometritis. Here we have either a mucous or muco-purulent or bloody, perhaps offensive discharge, protracted menstruation. While it is true that many such cases can be correctly diagnosed from the history and the character of the flow, it is equally certain that the routine treatment of curettage and intra-uterine applications does not cure quite a few of those patients. Why? Because the diagnosis was wrong, being based upon the feeling transmitted to the hand by the curette (sound) and even upon the microscopic examination of the *débris* removed by the curette. The mistakes thus made consist in the non-recognition of foreign bodies in the uterus such as polypus, fibroma or malignant growth of the body. I have just mentioned a case where an entire macer-

ated foetus was not discovered by the curette, and my experience has since shown me that I, like others, have repeatedly scraped out a uterine cavity without detecting a pedunculated fibroma. Some two years ago I was present at a hysterectomy done on a woman who, in the course of ten years, had been repeatedly curetted by some of the best men in town for uncontrollable menstrual flow. When the uterus was split open it was found to contain a slender pedunculated fibroma, hanging down from the fundus, over two inches long. Nobody had recognized it, in all the many examinations with sound and curette to which the patient had been subjected.

It is of course impossible not to discover at once an intra-uterine polypus with the finger. I experienced in the first of my cases of this kind a peculiar feeling of shame mixed with satisfaction. I say of shame because the moment the tip of my finger touched a polypus I was compelled to reproach myself for not having sooner adopted this common-sense, absolutely safe and reliable means of getting at the very root of the trouble; and of satisfaction because I was able, after pushing the finger further ahead and locating the attachment, by a slender pedicle of the growth in the left horn of the uterus, to shove a double volsella up alongside the finger, grasp the tumor, and, after a few twisting movements, extract a fibroma of the size of a small plum, dispensing in this way with the major operation, hysterectomy, which had been seriously contemplated.

The same objection of unreliability may be urged in a restricted way against the value of the microscope in diagnosing cancer of the body of the uterus from tissues procured by curetting. For various reasons such scrapings often furnish rather poor material for microscopic examination. *First*, they may not contain any element from an isolated spot affected with the disease in question, because the curette by chance misses it. *Second*, they hardly ever produce pieces taken from the boundary line between diseased and healthy structure which alone furnish cuts absolutely convincing of the earlier stages of malignant growth. *Third*, the microscopist may be embarrassed in his judgment because he does not know what relation his specimen has to the axis of the uterus, whether it was cut off horizontally or on a bias, or whether it is turned upside down, in which case it might happen that he sees the characteristic alveolar structure of carcinoma, while in reality he has before him

but an oblique section of an ordinary gland. *Finally* it must be admitted that not all who are called upon to make hysterectomy have either acquired the necessary skill to conduct such delicate microscopical examination or have the necessary leisure. Under these circumstances I think it is of value to know that in some cases the finger may furnish additional information upon which to base a correct diagnosis. We then find circumscribed or more diffuse infiltrated knobs or the infiltrated edge of an ulcer filled with débris that easily breaks down. It is astonishing how nicely even small infiltrations in the body can be made out by bimanual examination, *i. e.*, with one finger in the uterine cavity.

In order to further illustrate the occasional misleading result of a microscopic examination and the superiority of digital examination kindly listen to the following histories: The one relates to a woman sent to me for radical operation on account of suspected carcinoma of the body of the uterus. She had been curetted twice. Her general health, in spite of the prolonged bleeding, seemed to be so good that I introduced a tent in order to look for a suspected fibroma. The examination, however, was unsatisfactory. I failed to reach the fundus, partly because the woman was too fleshy and the abdomen too firm, partly because the uterus was naturally high up so that my finger proved too short to reach near the fundus. Under these circumstances I procured, by curetting, quite a mass of "granulation tissue" to be submitted to the verdict of a pathologist. His report read: *Adenoma, showing tendency to become carcinomatous*. Thereupon I removed the uterus and found it to contain a fibroma of the size of a large walnut attached to the fundus by a short, slender pedicle. There was no trace of malignancy. Although I had entered the uterine cavity with the curette, after I failed with the finger, bent on finding a polypus, I did not recognize its presence.

The other case was a nullipara, sixty years of age, who complained of hæmorrhage and labor-like pains in the uterus. The uterus appeared enlarged. I thought the case to be either one of carcinoma of the body of the uterus or an intra-uterine polypus. With great difficulty because the hymen was imperforated and because the cervix was of almost infantile smallness (senile atrophy), I inserted a small tent in order to procure the next day a good specimen for microscopic examination. The first tent having worked

well, I inserted, as soon as I had enough scrapings, a larger one in order to get the cervix in shape so as to attempt digital exploration. The patient being chloroformed, I was surprised (considering her advanced age) at the ease with which my middle finger penetrated to the fundus. I felt an infiltrated area about the size of a silver dollar, located at the top and anterior surface of the cavity. The edge of this area was somewhat raised and hard, whilst its center was so soft and mushy that it seemed as if the finger might easily perforate it. This was undoubtedly a case of carcinoma in spite of the finding of the microscopist, which reached me the day after the operation. Later the examination of the extirpated uterus established the correctness of the diagnosis of carcinoma.

I will thus sum up the gist of my paper: Dilatation of the cervical canal by means of the laminaria tent is a safe and comparatively easy procedure—even in a nulliparaous uterus—to allow the introduction of the finger into the uterine cavity. It should always be done when any doubt exists as to the presence of any foreign body in the uterus, such as a dead foetus or part of it. The finger should also be introduced in uterine troubles where hæmorrhage is the chief symptom in order to diagnose polypus or cancer. A second curetting should never be undertaken before digital exploration has been done. A special indication for digital exploration suggested itself to me by noticing, in quite a number of cases upon examining specimens derived from hysterectomies in multiple fibroma that a pedunculated fibroma or polypus within the uterine cavity apparently was the chief if not the sole cause of the hæmorrhage for which the operation had been done. Hence, if the general conditions of the patient's health speak rather against hysterectomy, and if the cervix is easily enough reached for dilatation it seems rational to find out whether a pedunculated tumor be present by the simple removal of which the patient may be spared the risk of a major operation (hysterectomy). Not long ago I had under my care a case of this kind: A woman thirty-five years of age suffered with extreme anæmia, due to excessive and protracted menstruation caused by fibroma. The uterus had the size of two fists and contained about three distinct fibrous tumors. I had outlined to the patient this way of procedure: dilatation, digital examination, eventually removal of a polypus; in case none was found, hysterectomy. The family was satisfied with this when some friend brought in a confrère, who de-

clared the case such a critical one that dilatation meant waste of time, and that only an immediate hysterectomy could possibly ward off the patient's untimely death. A third colleague was then called in, and he proposed to first try electricity. He made three or four applications, when pieces of a fibroma were expelled, thus showing that after dilatation, as proposed by me, the finger would surely have recognized the polypus which was ready to be expelled by uterine contractions.

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THE CHANGES IN THE UTERINE MUCOSA DURING
PREGNANCY AND IN THE ATTACHED
FŒTAL STRUCTURES.*

(Continued.)

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Intervillous Circulation.

I have already stated my opinion as to the method by which maternal blood is brought into relation with the villi, viz.: by the opening of sinuses in the decidua through the phagocytic action of strands of foetal epiblast which extend downward into the compact layer from the plasmodial trophoblast lying on the surface of the decidua. According to this view, the blood probably first passes into the spaces of the original plasmodial reticulum between ovum and decidua, which are the forerunners of the large intervillous space of the permanent placenta.

In the permanent condition, I have shown that the villi are practically almost entirely attached to the surface of the decidua. They do not force their way through the walls of the maternal sinuses, so

* Read before the Royal Society of Edinburgh and awarded the first Research Prize of the Royal College of Physicians of Edinburgh in 1896.

as to hang naked in them, or to become covered by an investment of the endothelium which they have pushed before them. These old views must be entirely abandoned. As I have pointed out, it is very exceptional to find a villus hanging into the open mouth of a sinus at the surface of the decidua or attached to its walls.

I have also demonstrated that there is no extension of the endothelium of the maternal sinuses outward so as to form a covering for the villi, and I have shown that this view has been based upon an incorrect interpretation of the appearances seen in sections. Recent careful histological methods have shown that the covering of the villi, long termed "maternal endothelium," is really "foetal epiblast."

I now wish to notice particularly the condition of the maternal vessels which communicate with the intervillous space. It is very evident that, as the maternal blood circulates among the villi, giving up its oxygen and nourishment to the foetal blood in the villi, there must be openings in the serotina through which the current flows toward the villi and others through which it flows from them into the maternal venous system.

Much has been written on the nature of the serotinal vessels and their relationship to the intervillous space. Attention may be particularly directed to the work of Waldeyer, Turner and Bumm. It is usually stated that both arteries and veins open into the intervillous space. I object to the use of these words and would substitute "afferent" and "efferent" vessels instead.

There can be no doubt that in normal cases it is rare to find a vessel worthy the name of artery or vein in the superficial part of the mucosa. They are mainly capillaries, having lost their muscular and elastic coats deeper down. One does find a few small vessels to which the term "arteriole" may be applied, consisting of a lining of endothelium surrounded by one or two layers of somewhat flattened connective tissue cells. These conditions are found in the non-pregnant uterus as well as in early pregnancy. Block, who has particularly studied the vessels of the mucosa in eight specimens of pregnant uterus, is of exactly the same opinion as myself on this point.

One of the earliest changes in pregnancy is the dilatation of the capillaries in the superficial layers of the decidua, giving rise to large sinuses. The arterioles and venules which communicate with these are also somewhat increased in size. Microscopically, it is impossi-

ble to distinguish these arterioles and venules from one another, and I am at a loss to know how certain observers have so confidently figured vessels in their drawings as one or the other.

Neither can I give any support to those who describe a particular and definite arrangement of the afferent and efferent vessels, *e. g.*, Bumm, who, in his last paper gives a diagram represent the afferent vessels (called "arteries" by him) opening into the intervillous space on the sides of the outward prolongations of the decidua (called by him "intercotyledonary septa") and the efferent vessels (named "veins" by him) opening from the surface of the decidua between these prolongations. His beautifully figured artery coiling outward in a decidual hillock and then sending jets of red paint outward among the villi, must be regarded only as a pretty fancy.

No such systematic and orderly arrangement can be found. Afferent as well as efferent vessels open indiscriminately on the decidual surface between the decidual elevations as well as on them, as Farre long ago pointed out. And, for the most part, the openings occur between those narrow prolongations of the decidua to which the term "septa" has been applied. Kolliker, indeed, could find no arterial openings in these septa. They are generally poorly vascularized. Indeed, if the afferent blood alone proceeded from them the villi would be but poorly nourished.

The vessels by which blood enters and leaves the intervillous space are practically entirely the large sinuses—dilated capillaries of the compact layer of the serotina. The opening of communication will direct an afferent or efferent current, probably according to whether it is nearer the arterial or venous end of the sinus. It is very rare for a small arteriole or venule to open directly into the intervillous space. As to the number of openings in a full-time specimen, we have no accurate information. Attempts have been made to estimate them. According to Waldeyer they are most numerous in the central portion of the area serotina.

As to the physics of the intervillous circulation, it is very evident that the windings of the small arterial vessels through the muscular part of the uterine wall and the deeper part of the mucosa must be associated with a diminution of the force with which the blood is poured into the intervillous space. The capillary-dilatation forming large sinuses must also assist in diminishing the force of the current. The reason of this weakening is very evident. Were the arteries to

run a straight course and to open directly into the intervillous space without the interposition of blood-sinuses, the jets of blood would probably be a source of danger to the villi, tearing them across or separating them from their attachments.

The condition of the veins in the mucosa is such as to favor the removal of the deoxygenated blood as rapidly as possible; they have not the tortuosity of the arterioles but run a more simple course.

In conclusion, it may be noted that the intervillous circulation is so conditioned as to be largely independent of sudden changes in the maternal vascular system. It is probably not a swift-flowing, pulsating stream, but a steadily-moving mass of blood. Evidently the least motion will be at the parts most distant from the openings, *i. e.*, the surface of the chorionic membrane. Variations in resistance will also be found next the decidual surface, according to the number and position of the openings of the maternal sinuses in it.

The Amnion.

(*Vide* Various Figures Between 53 and 202.)

At what period in the human ovum the folds of the extra-embryonic somatopleure develop giving rise to the amnion, we are uncertain.

In Merttens' early specimen (? 8 days) there was no amnion. In his (? 14 days) the amniotic cavity was completely formed. So was it in Schwabe's (? 13-15 days) and in Spee's (second week).

As to the structure of the first-formed amnion we cannot speak with accuracy. It will be of extreme interest to trace changes in the epiblastic cells from their somatopleure condition and to compare them with the changes in the development of the chorionic epithelium.

In Spee's early case (second week) the amnion consisted of a single layer of flattened cells—the epiblastic portion and a single layer of flattened cells close to it, the mesoblast.

Third and Fourth Weeks.

The epiblastic layer is not unlike an endothelium, so flattened are the cells composing it. In many parts no lines of division can be distinguished between the cells. The distances between the nuclei

vary. The nuclei are rounded or oval. The cell-matrix stains faintly. Here and there one sees more than one row of nuclei.

The mesoblastic tissue varies in thickness. It is composed of an outer layer very similar in appearance to the epiblastic layer and termed the *mesothelium* and an inner layer lying next the epiblast, composed of a homogeneous faintly-staining material, finely fibrillated, in which very few cells can be seen; the latter are close to the mesothelium and are probably formed from the cells of the latter.

It is evident, therefore, that from the early period in which the amnion was composed of two rows of cells, one epiblastic and the other mesoblastic, there has been an advance, viz.: the formation between them of the homogenous matrix from the mesothelium.

Second Month.

During this month the epithelial and mesothelial cells become scarcely altered. The matrix between them is increased. It is somewhat condensed and fibrillated especially next the epiblast, and looser next the mesothelium. Cells are scattered throughout it—oval, fusiform and branching in character. Many of the cells appear to lie in lacunæ. In many parts the direct continuity of the mesothelium is broken, its cells being loosely scattered among the neighboring loose fibrils. Only here and there is there any attachment to the chorionic mesoblast by means of delicate fibrils.

Fourth Month.

The epithelial cells are relatively more numerous; they are less flattened and more packed together, being cubical mostly, or, in some instances, columnar. The original flattened cell is rarely found.

The connective tissue still presents a dense homogeneous appearance next the mesoblast. It varies in thickness, and may contain only a few irregularly-scattered cells, or they may sometimes be found in small rows. The loose layer also varies in thickness, but, on the whole, it is somewhat more abundant than in the early months. In some parts this layer may not appear loose because the fibrils are so closely packed together. Very few remains of a distinct mesothelium are found. There are more marked strands con-

necting the connective tissue with that of the chorion; very few cells are found in these, however.

Sixth Month.

The epithelium has not altered to any extent. During this month more condensation is found in the loose layer of the connective tissue. Relatively fewer cells are found in it. They are mostly fusiform, though others are found, rounded, oval, or branching. Traces can be found of a mesothelium. Here and there the connective tissue may be quite fused with that of the chorion, but in most parts the connection is by means of loose strands.

Full Time.

The epithelium is mainly cubical, but in different places it is markedly columnar, the nuclei of the latter being in the outer parts of the cells. The lines of division between the cells are only faintly marked, as a rule.

On surface view, the cells appear irregularly rounded or polygonal in outline, broader in diameter than they are in their vertical measurement.

Most of the cells possess only one nuclei; some of the larger ones have two. Lange has pointed out the occurrence of groups of cells, as seen on the surface view, arranged either as a double row or as a group concentrically arranged around a point. These cells are large, of various shapes, and their nuclei are placed in their outermost parts, *e. g.*, furthest from the centre of the group.

On careful examination the edges of the cells are seen to be very irregular, the projections of the adjacent cells blending so as to form bridges between the cells. This gives the well-known "prickle" appearance.

Stomata have been described among the cells by various authors, *e. g.*, Hüter, Winkler, and Windgradow. Lange has studied these openings carefully and he believes that they are simply lacunæ formed by the breaking down of degenerating cells. It is difficult to come to an opinion regarding these openings. Apart, however, from these large communications, it is extremely likely that between most of the epithelial cells, minute channels exist, through which fluids may pass.

At this period of gestation the condition of the connective tissue is much the same as at the sixth month. Very seldom can any distinct remains of a mesothelium be traced. In most parts the connective tissue is loosely connected with that of the chorion. The loose connecting strands are called the sub-amniotic layer by Barbour. Here and there is firm union so that no distinction can be made out. As Minot has pointed out, the nuclei of the connective tissue cells are more irregular in the late months of pregnancy. They become granular and tend to break up somewhat.

(To be continued.)

TREATMENT OF UTERINE PROLAPSE WITH ILLUSTRATIVE CASES.*

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Downward displacement of the uterus is a condition which so frequently occurs, which produces so much discomfort to the patient, and which so surely tends to become progressively worse if not promptly and properly cared for, that the best method of treatment is always of interest and importance to the gynæcologist.

In this paper the treatment of acute prolapse, a rare occurrence, produced by a sudden fall or violent effort and accompanied with symptoms of shock, intense pelvic pain and possibly hæmorrhage, will not be discussed; but attention will be devoted to the chronic variety which, developing gradually and far more frequently, is of greater importance.

Prolapse of the uterus may be conveniently and practically divided into three different degrees of descent:

1. A slight lowering of the uterus, with the fundus below the pelvic brim, but maintaining its ordinary anterior inclination.
2. The uterus lower, with a change in the axis of the organ and the os appearing at the vulvar orifice.

* Read before the Philadelphia Obstetrical Society, September 2, 1897. .

3. Complete prolapse or procidentia, in which the organ projects completely beyond the pudendal orifice.

In order to treat successfully this malposition one must have a thorough comprehension of the etiology in each individual case. By far the most frequent cause of descent of the uterus is the laceration and relaxation of the pelvic floor, impairing the proper anatomical support of the internal organs of generation, and permitting, first, a descent of the vaginal walls, then retro-displacement, with gradual lowering of the uterus. Associated with this relaxed condition we almost invariably find an enlarged, sub-involuted uterus, which, through its disturbed venous circulation and increased weight, possesses an inherent tendency to become prolapsed.

The indirect or predisposing causes which are important factors in inducing and increasing prolapse are the chronic metritis resulting from frequent parturitions; too brief a period of rest in a recumbent position after labor or miscarriage; tight lacing and the weight of heavy clothing improperly suspended from the waist instead of the shoulders, thus increasing the intra-abdominal pressure; the heavy lifting and powerful muscular exertion too frequently necessary in the life of a working woman; chronic constipation and difficult defæcation; uncorrected retro-displacements, and the presence of any intra-abdominal neoplasm acting mechanically, forcing the uterus to a lower level.

Briefly, these causes may be summarized under three heads: 1. Those increasing intra-abdominal pressure. 2. Those increasing the weight of the organ itself. 3. Those decreasing the normal support from below.

Since the days of Hippocrates and Galen and the period when the old Arabian writer, Avenzoar, advised that in obstinate cases of prolapse the woman should be held upon her back and a frog, lizard or mouse be thrown on her feet and legs, as if to frighten the extruding organ to resume its proper position, until the present time, the resources of human ingenuity and of mechanical and surgical inventive genius have been taxed to the utmost to ascertain the surest and safest method of relieving these suffering women. Vigorous and varied as these efforts have been, many admirable and advantageous, many amusing and absurd from the vantage point of to-day, not much progress had been made until the time of Marion Sims. Although our present attainments are far from ideal, yet

the recent advances have been marked. Only fifty years have elapsed since the erudite and scholarly Meigs, in his charming conversations on gynæcology, could only, like Hippocrates, suggest *pessaries* for the relief of prolapse, and had probably never dreamed of the utility of plastic surgery; but now every gynæcologist of note has felt compelled to devise or modify some method for the relief of prolapse, and we are left to select that plan best adapted to the individual patient.

Treatment.—The treatment may be sub-divided into: 1. Prophylactic. 2. Palliative. 3. Surgical or radical.

Prophylactic.—The preventive measures that may be resorted to in order to avoid prolapse are numerous. When the tendency exists the avoidance of constricting clothing, which constantly increases the intra-abdominal pressure, is important. Women with relaxed abdominal walls or who are very obese should wear a well-fitting abdominal supporter, which will relieve the intra-pelvic weight. Chronic constipation so prevalent in women with pelvic disease should be overcome. In cases of chronic inflammation of the uterus and endometrium, decongestant agents, hot douches and boroglyceride tampons should be used, and if necessary there should be a thorough curettement of the uterus. If the laceration of the cervix is extensive, with eversion of the mucous membrane, it should be repaired; and where much hypertrophy exists, an amputation of the cervix is the quickest and best method of reducing the weight of the organ. By the proper protection of the perinæum during labor, many lacerations of the pelvic floor may be avoided; but if they do occur, and they frequently will in spite of well-directed efforts, then prompt repair, even of slight tears, should be made; because the danger of infection, of subinvolution of the vagina and uterus, and later, of descensus of the uterus, may thus be prevented.

In those cases where cystocele and rectocele already exist, or are developing, prompt anterior colporrhaphy and perinæorrhaphy should be performed.

In many cases of retro-position of the uterus, the only reason it does not become prolapsed is because of the firm perimetrial adhesions which may in time become so stretched as to permit uterine descent; by the correction of the retro-displacement and the performance of ventro-fixation, the uterus may be maintained in position and the patient spared much subsequent suffering.

A very important point in prophylaxis is more prolonged rest after parturition and abortion; so many patients do not take proper care of themselves after the premature expulsion of the ovum, neglecting either to call a physician or to follow his advice, thus planting the seed for much future misery, and too often rendering necessary a sacrificial operation. Physicians should teach the laity that abortion is far more dangerous than labor at term. Infinite harm is done after parturition or abortion by the too early return of the patient to her daily occupation, involving heavy lifting and violent muscular activity, often unavoidable among the poorer classes where necessity demands they earn their livelihood. Verily, "the destruction of the poor is their poverty," and prolonged misery results from this violation of nature's edicts.

Palliative.—When prolapse is present, the reduction of the uterus is usually easily accomplished, if careful and intelligent taxis is employed. If difficulty is found, due to the herniated mass, after thorough evacuation of the bladder and rectum and after rest in the recumbent position, the reduction may be effected by the employment of hot sitz baths and hot liq. plumbi et opii, followed by the application of an elastic bandage.

Sometimes placing the patient in the genu-pectoral position, thus relieving the intra-abdominal and intra-pelvic pressure, firmly and forcibly pushing the uterus upward in the axis of the inferior strait of the pelvis will be necessary; but in the majority of cases simply placing her in the dorso-sacral position, with gentle pressure, is sufficient to replace the organ.

In all cases the reposition should be followed by treatment tending to relieve the pelvic congestion and to lessen the uterine and vaginal hypertrophy, as the vaginal walls usually have become thickened from the proliferation of the epithelium and hypertrophy of the submucous areolar tissue, the rugæ effaced and the entire character of the mucous membrane changed by its exposure to friction and atmospheric influences. This is best treated by the use of copious hot injections of one-per-cent. solution of creolin, tampons of ten per cent. ichthyol in glycerine, or, if more astringent action is needed, tannin and glycerine. Very often in cases of procidentia irregular ulcerated surfaces are found which should be treated by dusting them thoroughly with powdered acetanilid or tannin and iodoform in equal parts, and by packing the vagina with iodoform

or borated gauze. Packing with gauze has the double function of keeping the uterus in position and promoting the absorption of inflammatory deposits.

The associated cystitis, often resulting from the displacement and imperfect evacuation of the bladder, is best treated by gentle vesicle irrigation, using a solution of acetate of lead ($\frac{1}{2}$ gr. to 4 ounces of water), or dilute nitric acid (2 or 3 minims to the ounce; this is especially useful when there is a tendency to phosphatic incrustations); and the internal administration of 10 gr. doses of boric acid three or four times daily. Infrequently primary vesical calculi are formed, due to the precipitation of the ammonio-magnesian phosphates; these calculi should be removed. Lithotripsy is rarely required, because of the capacity and dilatibility of the female urethra.

Having reduced the uterus and relieved the complicating conditions, the question arises how shall we maintain it in proper position. In many instances there exist contra-indications to surgical procedure, or if no contra-indications to the mind of the surgeon, the patient herself refuses to submit to the necessary anæsthesia, etc., then our ingenuity must be exercised to find some artificial support for the organ. Temporarily the employment of large tampons, preferably of lamb's wool, dusted with some astringent or antiseptic powder such as iodoform and tannin, alum and bismuth sub-nitrate 1-6, aid in reëstablishing the supporting power and in contracting the distended superficial vessels.

The acute inflammatory symptoms must subside before the introduction of a pessary, an instrument which frequently does more harm than good, and which often distends the vagina and prevents its regaining anything of its former tone and elasticity; it is simply choosing the less of two evils and relieving where we cannot cure.

In this condition in which the uterus, vagina, rectum and bladder are all dislocated, the pessary simply acts as a splint to maintain them as effectually as possible in a normal relationship. The inflated soft rubber ring pessary should be used, as it gives the least discomfort to the patient. It has a wide range of application, and does not irritate the vagina. It must be removed and renewed frequently, as it will absorb secretions and become the source of disagreeable discharges. In those cases in which glass or hard rubber balls are used, where they exert the requisite pressure to sus-

tain the uterus, they almost invariably cause pain and ulceration. In many cases where the ring or disk pessary fails, because of the extensive laceration of the perinæum or relaxation in the muscular planes of the pelvis, a cup pessary with abdominal belt may be worn. The cup, which is perforated to permit the discharges to escape, receives the cervix uteri, and the abdominal belt is useful in sustaining the abdominal wall. The variety which has been successfully used in a number of cases of procidentia is the so-called McIntosh cup pessary with belt. The simplicity of the instrument permits its removal or introduction by the patient with perfect facility. All pessaries should be examined frequently to see that the vagina is not irritated by their presence, and frequent irrigation should be employed.

The use of pelvic massage, as suggested by Thure Brandt, of Stockholm and practiced by Schultze, Profanter and others, has not been successful in my experience; the prolonged and tedious manipulations are tiresome to both patient and physician, and rarely will either possess the inexhaustible patience to employ effectively the kinesietherapeutic method.

All the prosthetic methods of treating uterine prolapse as yet cited, are merely palliative; and it is only by resorting to surgical procedures that we are likely to effect a cure of this condition, since these mechanical devices are usually imperfect and uncomfortable means of support.

Surgical or Radical.—Many of the palliative methods herein detailed must be employed preparatory to plastic operations. The selection of the operation will be influenced by the age and the condition of the patient, and the cause and degree of the descent. Wherever the prolapse is caused or complicated by intra-abdominal tumors, *i. e.*, fibroids, ovarian cysts, or tubal accumulations, as in cases Nos. 8, 10, and 15, these should be removed. Where the increased size of the uterus, due either to sub-involution or hypertrophic elongation or laceration of the cervix, is the main ætiological factor, the reduction of the size of the uterus is effected by a thorough curettement of the organ by a trachelorrhaphy, or by amputation of the cervix.

The operations which have been used in this series of cases have been Emmet's operation of trachelorrhaphy—carrying the incision of the denudation well into the angles of the laceration and thor-

oughly removing the cicatricial tissue and using sutures of silkworm gut or chromicized catgut—and, where there has been much hypertrophy with eversion of the cervical mucous membrane, Schroeder's operation—excising a wedge-shaped piece from the anterior and posterior lip of the cervix, which removes diseased tissue, favors involution, and reduces the weight of the organ.

Where there is marked relaxation of the pelvic floor with cystocele and rectocele, and with the uterus in either the first or the second degree of descent, anterior colporrhaphy and perinæorrhaphy should be performed in addition to the foregoing operation, if they have been indicated.

The two operations for cystocele which have given the best results are those devised by Stoltz and Hegar. Stoltz's operation consists of a circular denudation over the most prominent part of the cystocele, and the insertion of a purse-string suture of strong silk. When the suture is tied, the denuded surface is brought together and closed like a tobacco pouch, forming a puckered cicatrix and giving firm support to the bladder. In Hegar's an elliptical denudation is made, the exuberant tissue of the vagina is excised and a continuous suture of catgut in superimposed layers is employed.

In treating the posterior colpocele and lacerated perinæum no operation surpasses the admirable one devised by Emmet in cases where there is an incomplete tear. The denudation in the lateral vaginal sulci should be carried high up on the posterior vaginal wall in order to diminish the caliber of the distended vagina, and the sutures should dip deeply downward on either side in order to catch the fibres of the pelvic fasciæ and muscles. The *muscles* of the pelvic floor must be thoroughly restored or the patient will not derive benefit from the operation; a thin-skin perinæum which simply closes the vulvar orifice and does not form a buttress for the support of the vaginal wall, will be useless.

In cases where complete lacerations were present, Simpson's flap-splitting operation was used, extreme care being exercised to include the extremity of the lacerated sphincter.

Of the operations which have been more recently introduced, acting on the entirely different principle of supporting the uterus from above, ventro-fixation has been selected in the belief that it gives better results and is more satisfactory than shortening the round ligaments by the operations of Alexander and others.

In performing ventro-fixation the appendages can be thoroughly examined, and any adhesions which exist may be treated; and, under proper aseptic precautions, the risk to the patient is very little greater than in Alexander's operation. In performing hysterorrhaphy two fine buried silk sutures were used, passing them through the peritonæum and a small portion of the muscle of the abdominal wall and including only enough of the uterine tissue to sustain that organ.

The patient will suffer less by the substitution of a practically immovable anteverted organ than she will from the displacement of the uterus, bladder and rectum. In those cases in which hysterorrhaphy has been used the relaxation of the pelvic floor has also received attention, so that less tension would be brought upon the new ligament formed by the suspension operation and subsequent colpocoele prevented.

In the treatment of procidentia these combined methods may be employed; or in cases which have resisted all other kinds of treatment, or in which the patient has passed the menopause, or where there is extensive ulceration of the vaginal wall or cervix predisposing to malignant degeneration, vaginal hysterectomy is often indicated and justifiable. The atrophied condition of the tissues in many women after the climacteric renders the firm union requisite in plastic work improbable; but, after the extirpation of the uterus per vaginam, by the removal of the redundant vaginal tissue and consequent narrowing of the vagina sufficient support will be given to the bladder and the rectum, and the patient's symptoms will be entirely relieved.

The operation is comparatively an easy one and the hæmorrhage readily controlled. The *modus operandi* consists in fixing the uterus firmly with double tenacula or volsella, incising through the vaginal mucous membrane with the thermo-cautery, and dissecting the bladder from the anterior uterine wall with the finger, ligating the broad ligament with arteries on either side, and removing the uterus with its appendages. Though there is greater danger of injury to the bladder and the rectum in this operation than in hysterectomy under ordinary circumstances, if the changed relations are borne in mind this can be avoided. After the removal of the uterus, the vaginal canal should be narrowed and the upper extremity of the vagina be permitted to close without the introduction of sutures.

An ingenious operation which has been devised recently (but not employed in this series) which is restricted to women who have passed the child-bearing period, or in whom the marital function can no longer be performed, consists in encircling the vagina from above downward with silver wire sutures, allowed to remain permanently, which diminishes the caliber of the canal and sustains the uterus, but permits the escape of discharges. This operation, suggested by Freund and practiced by Mundé, has given good results.

The use of the actual cautery, mineral acids, escharotics or forceps to produce sloughing, should be relegated to a deserved oblivion. And we, by the application of correct and up-to-date surgical principles, should endeavor to give that relief to our patient which is our highest aim.

Illustrating Cases.

1. Mrs. G. B., aged forty-four, prolapse, second degree; treatment, trachelorrhaphy (Emmet's), Stoltz's anterior colporrhaphy and Emmet's perinæorrhaphy.

2. Mrs. E. McN., aged forty-two, prolapse, second degree, with large rectocele. Emmet's perinæorrhaphy performed.

3. Mrs. M. M., aged forty-five, prolapse of first degree, with rectocele; patient had also suffered from diabetic pruritus which was treated prior to operation. Emmet's perinæorrhaphy.

4. Mrs. B. D., aged forty-five, prolapse of first degree; dilatation and curettement. Hegar's perinæorrhaphy.

5. Mrs. R., aged thirty-eight, prolapse, first degree; dilatation and curettement, with repair of lacerated cervix and perinæum.

6. Mrs. E. D., aged eighteen, prolapse of first degree, with complete laceration of perinæum and laceration of recto-vaginal septum. Simpson's perinæorrhaphy modified.

7. Mrs. McF., aged twenty-three, endometritis and prolapse of the first degree. Dilatation and curettement, with Hegar's perinæorrhaphy.

8. Mrs. G. H. B., aged twenty-eight; diagnosis, retroversion and descent, with cystic ovary. Hegar's perinæorrhaphy, removal of left ovary and resection of the right ovary, ventro-fixation of uterus.

9. Mrs. C. F., aged twenty-seven; diagnosis, sub-involution of

uterus, laceration of cervix and perinæum, with prolapse of second degree. Dilatation and curettement, trachelorrhaphy, anterior colporrhaphy, Emmet's perinæorrhaphy.

10. Mrs. C. H., aged thirty-five, nullipara, prolapse due to presence of sub-peritoneal fibroid in fundus of uterus. Treatment, abdominal section and the enucleation of fibroid tumor, size of a walnut, from the fundus of the uterus; incision in uterine tissue sutured with fine silk; and ventro-fixation.

11. Mrs. M. K., aged twenty-five, complete laceration of perinæum, with beginning prolapse of uterus, and endometritis. Curettement and Simpson's perinæorrhaphy.

12. Mrs. S., aged forty-two, prolapse of first degree, with laceration of pelvic floor and recto-vaginal fistula. Tait's flap-splitting operation, with freshening of the margins and closing of the fistula.

13. Mrs. G., almost sixty, procidentia; uterus small, atrophied; extensive cystocele and rectocele. Operation, Stoltz's anterior colporrhaphy, Emmett's perinæorrhaphy.

14. Mrs. E. K., aged sixty-eight, XIV-para, procidentia. Operation, vaginal hysterectomy as detailed above.

15. Mrs. A. V., aged twenty-six, procidentia complicated with double pyosalpinx. In this case Hegar's anterior colporrhaphy and perinæorrhaphy were performed, the abdomen opened and double pus tubes with two small abscesses in the fundus of the uterus found. Supra-vaginal hysterectomy was performed, and peritonæum and broad ligament sutured in such a way as to prevent prolapse of the cervix and vaginal walls.

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CANCER OF THE UTERUS AND THE GENERAL PRACTITIONER.*

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In no class of gynæcological disorders does the general practitioner bear so large a share of the responsibility, because in none is he so universally the first professional consultant, and in none is a correct diagnosis at this time generally so easily made, and an erroneous diagnosis so fatal and yet comparatively so frequent, as in cases of cancer of the uterus. This paper is limited to a brief review of matters of practical importance to the busy family doctor relating to the early diagnosis of this disease, as presented to my mind from personal observation and thoughtful reflection in the study of a large number of cases. It is presented to this society for discussion, because the gynæcological specialist, above all others, is best fitted to pass judgment upon the responsibilities and to define the duties of the general practitioner in his relation to these unfortunate subjects.

The comparative frequency of this disease, its causation, gross pathology, symptoms and certain differential points in diagnosis should constantly be borne in mind by the physician in his daily family practice.

Cancer is three times as frequent among women as among men, and in more than fifty per cent. of the cases the morbid change occurs either in the uterus or the mammæ, the former organ being affected more than three times as often as the latter. In the female, therefore, cancer of the uterus occupies the most conspicuous place, and it attacks this organ oftener than the sum total of the same disease in all the organs of the male combined.

Cancer of the uterus is a disease of advanced years. It is most common between the ages of forty and fifty-five or during and immediately following the establishment of the menopause. It is rare

* Read before the Philadelphia Obstetrical Society, September 2, 1897.

before the age of thirty. Multiparity, heredity, prolonged mental worry, bad hygienic environment, poverty and lowered constitutional states in particular, traumatisms, and local irritations, are among the predisposing causes of this disease.

The term malignant, as applied to cancer, signifies that the disease is characterized by a morbid process that gradually involves contiguous healthy tissues, and by lymphatic extension invades neighboring and distant organs, and finally tends to systemic infection; that it has a tendency to return after removal, and if allowed to go unchecked progresses to a fatal termination.

The degree of malignancy in cancer of the uterus, primarily, depends more upon the section of the organ involved than the special histological character of the disease. Cancer of the cervical canal, for example, is vastly more malignant than cancer of the exposed vaginal cervix, while primary cancer of the body of the uterus is the least malignant, and, therefore, the most amenable to radical surgical treatment. This difference in malignancy is due to the close and peculiar lymphatic connection of the supra-vaginal cervix with surrounding structures, favoring a more ready distribution of the morbid elements to the pericervical pelvic connective tissue.

Carcinoma of the uterus is most common in the vaginal cervix; next in frequency is that of the cervical canal, while the body is primarily involved in only about two per cent. of cases.

Microscopic appearances of structure will not be referred to because they present themselves to the busy practitioner more in the form of difficult algebraical problems than as practical working formulas; furthermore, experience in the diagnosis of this disease has taught us that reliable expert pathologists are numbered among the few even in our large cities.

Clinically, before it has spread to surrounding structures, the disease, as it appears in the cervix, may be classified as follows: 1. Superficial. 2. Parenchymatous, or nodular. 3. Cancer of the cervical canal.

In cancer of the vaginal cervix, or the superficial form, two varieties are met with: one that appears at the site or in the vicinity of the external os, in the form of hard, nodular and friable granulations that tend to a molecular loss of substance, which sooner or later leave an irregular punched-out appearing ulcer, having a foul, indurated, nodular base; or it may develop from apparently benign

papillary growths, in the form of a cauliflower excrescence, becoming so large in many cases as to fill the vaginal vault. The former gradually destroys the cervix by a progressive molecular erosion, and unfortunately, has a special tendency to extend in the direction of the cervical canal, while the latter presents itself as an added new growth spreading toward the vagina. The cauliflower variety may remain limited to the surface of the cervix for a comparatively long time before the tendency to invade the vagina and the deeper structures becomes manifest.

The parenchymatous variety appears as an irregular cartilaginous hardness of the cervix, or in the form of one or more nodules beneath the mucous membrane within its deeper structure that project in the direction of the vagina or the cervical canal. From its physical aspects it might well be termed scirrhus carcinoma. By its progress it eventually destroys the mucosa, resulting in the formation of a cancerous ulcer. The most striking characteristic of this form, however, is the tendency to early invasion of the pericervical tissues, as compared with the latency of the symptoms, the patient being practically doomed before the first symptom of any abnormality presents itself. Before ulceration has taken place this form of the disease is often difficult to diagnose.

Cancer of the cervical canal generally begins in the mucous membrane, and is characterized by an infiltration, which soon disintegrates and causes a slow destruction of the parts by a crater-like ulceration. But before the destructive process can be recognized by a physical examination the disease has usually extended to the body of the organ, and has invaded the pericervical connective tissue, thus rendering the case hopeless.

Cancer of the body of the uterus may be primary or secondary. The latter, as a matter of course, indicates a hopeless condition. Primarily, the disease has its origin in the mucous membrane. The body of the organ almost invariably becomes appreciably enlarged. The diagnosis should be based upon the clinical history rather than upon the uncertain report of the microscopist.

The infiltrating extension of these various forms of the disease to the neighboring glandular structures and to the pelvic connective tissue in the pericervical and perivaginal regions sooner or later compromises the functions and the normal integrity of other important organs by involving them in the morbid process. In ad-

vanced cases the ureters become dilated from obstruction, due either to pressure or infiltration of their walls ultimately producing a condition of hydronephrosis; and through ulcerative extension, one or more of the various forms of urinary or fæcal fistulæ may result as most distressing complications. General pelvic infiltration and the involvement of the larger vessels of the pelvis with systemic infection at last hasten the approaching doom.

Bearing upon the question of differential diagnosis, the following diseased conditions of the cervix may be considered: Chancre, chancroid, erosions and ulcerations, papillary growths, chronic metritis and cervical myoma.

Aside from the history of a given case and the age of the patient, a chancre or chancroid, or even a simple ulcer, bear no resemblance to a cancerous ulceration, with its nodular, hardened base, its foul detritus, and its unhealthy-looking, bleeding and friable granulations; besides, a short course of treatment would soon remove all doubt as to the true condition. But the most important point of interest in this connection is the extreme rarity of such diseased processes in connection with the cervix. In the examination of thousands of cases I have never seen either a chancre or a chancroid in this region, while simple, benign ulcerations are very rare indeed.

Erosions of the cervix, the result of inflammatory discharges from above, are common, but these abraded, velvety, non-friable, granular surfaces, with their regular outline and uninfiltrated bases, certainly could not be mistaken for anything else by a careful observer. Mucous patches and benign papillary growths, as distinguished from cancer, are more numerous and more widely distributed. According to my experience, a papillary excrescence *limited* to the cervix is always malignant.

Reference has already been made to difficulties encountered in the diagnosis of the nodular or parenchymatous forms of cancer of the cervix. The differential points before ulceration in a case of this character, as compared with metritis, are, that the cervix in both may be enlarged, but in metritis it presents a smooth, regular outline, and the mucous membrane is movable over the subjacent structures, while in cancer the surface, though smooth, is uneven and frequently nodular, and the mucous membrane is generally infiltrated and adherent. Myoma of the cervix is very rare. It differs

from cancer in that the mucous membrane covering it may be stretched, but as in metritis, it is not adherent or infiltrated.

The cases that go unrecognized until the most extreme limits of the disease have been attained are not numbered among the few, while those in whom the disease could, and should have been diagnosed before the extension of the morbid process to the pelvic connective tissue obtained, and the life of the patient thus compromised, are among the very many. Considering the fact that the disease can, with but few exceptions, be diagnosticated at a comparatively early stage as readily as the same affection in other more exposed parts of the body, the statement that only about one in ten of these cases, when first presented to the surgeon, have any chance of benefit from a radical operation, is an evidence of the gross ignorance and careless indifference on the part of women respecting the condition of their sexual organs on the one hand, and a sad reflection upon the professional care of patients by the family physician on the other. The average physician's skill to diagnosticate the disease upon making a proper physical examination cannot be questioned, but the whole difficulty lies in the fact that he is either not consulted or permitted to make an examination at a sufficiently early period, or, as is too often the case, he *neglects* to insist upon the necessity of such a procedure, and dismisses his patient with a "placebo" and the assurance that the symptoms concerning which she sought his professional opinion are mere coincidents of a normal physiological change at her period of life; and thus the case is allowed to go on until unquestionable discharges, pelvic pain, and evidences of constitutional invasion at last force a knowledge of the true condition upon patient and physician at about the same time. The shock to a patient thus afflicted when she first learns of her serious condition is most distressing and pitiable to witness, and the professional attendant, at the time, is very apt to experience a commingled feeling of sadness and regret by recalling the day she first consulted him with reference to a "slight," but constantly-recurring hæmorrhagic discharge, that he so ill-advisedly attributed to the "change of life."

Pain is so thoroughly engrafted upon the minds of the laity as an essential accompaniment of cancer that the absence of this symptom is the chief difficulty in the way of seeing a large proportion of these cases in the earlier stages. But pain, as a matter of fact, is

usually a late symptom, and does not appear until the disease has invaded the tissues surrounding the uterus. It is the least important, from a diagnostic standpoint, of all the symptoms. When it does occur it is located in the region of the uterus and sacrum, and is of a radiating, neuralgic character and very severe. Hæmorrhage, on the other hand, be it ever so slight or profuse, whether occurring in the form of menorrhagia or metrorrhagia, whether excited by coition, by straining, or by exercise, or as an apparent coincidental manifestation, either during or following the establishment of the menopause, it is, at once, the earliest, the most constant, and, therefore, the most important symptom to be considered in connection with the early diagnosis of this disease. It grows in importance the closer its relation to the menopause. One of the most fatal of traditional fallacies in gynæcological practice that has been handed down to us from a former generation is that menopausal hæmorrhage is physiological. This opinion is held in all seriousness by the laity in general, and, unfortunately, is shared by a great many family practitioners, while some of the latter still regard it as a sort of natural outlet for the evil humors that they fancy harass these unfortunate individuals at this critical period. In health the decline and final cessation of the menstrual function is gradual and without irregular activity. Metrorrhagia or menorrhagia at this or any other period of a woman's life, is always the result of local disease, or some constitutional abnormality, demanding careful inquiry on the part of the professional attendant. The acceptance of this principle as an axiom by the profession at large would save innumerable lives that are now sacrificed, and relieve great suffering, because the source of the hæmorrhage would then be looked for before carcinomatous disease, in a given case, had advanced to an irremediable stage.

To illustrate and emphasize the importance of this symptom permit me to cite the following case:

Mrs. W., aged fifty-seven years. Married fifteen years; widow twenty-five years. Had four children, the youngest of whom was twenty-seven years old. Passed the menopause at the age of fifty-two. Her mother had died from cancer of the uterus. First made patient's acquaintance three years previously. At this time she was enjoying robust health, and all in all was one of the best-preserved women for her age I had ever met. Within a year and a half she

buried a daughter and a son. (The daughter had lingered with a chronic ailment for more than a year, and throughout her illness was carefully nursed by this more than anxious mother). Several weeks previous to the daughter's death she was taken with a severe attack of the grip, and was as yet barely able to be about on the day of the funeral. The prolonged anxiety, with loss of rest, in connection with the results of this most debilitating illness, marked the beginning of a gradual decline in general health. She soon lost her erect form and well-rounded figure, the color in her cheeks faded, and the evidences of advancing years gradually became more manifest. After the lapse of about two months following her daughter's demise my attention was directed to a "very slight" though frequently-recurring hæmorrhagic discharge that had first made its appearance a few weeks previously. The necessity of an examination to discover the cause of the hæmorrhage was explained to her, but not until another week had elapsed was this permitted. My examination revealed nothing unusual either in the appearance of the cervix or the size and mobility of the uterus, save that instead of meeting with the atrophic changes incidental to the menopause, the body of the organ appeared to have retained the size common to its former functional activity. This, in connection with the bloody discharge, was sufficient to arouse a suspicion of malignancy. Three weeks later, however, an appreciable difference in the size of the body of the organ was detected, while the hæmorrhagic element had become somewhat more pronounced. The cervix appeared perfectly normal. A diagnosis of malignant disease of the body of the uterus was now made with certainty and immediate removal of the organ was urged upon the patient and her friends as the only means offering any hope of permanent relief. A week later my diagnosis was confirmed by a consultant, who based his opinion upon the clinical history, and who likewise appreciated the fact that no other disease, at her time of life, could have caused a beginning enlargement of this organ. The diagnosis in this case could not admit even the possibility of a doubt, and a radical surgical procedure at this early stage offered every prospect of a permanent cure. But the usual experience of the honest and faithful family practitioner, who shows an extraordinary interest in his patient at a critical period, was soon realized. She took the advice of the "sage and wise women" of her circle, and a few weeks subsequently

consulted one of our unscrupulous, though fashionable, office-tinkering gynæcologists, who, after making an examination, assured her that the cause of the bleeding was due to a benign growth, and that by making two visits to his office weekly he would soon remedy the trouble. Upon being informed of my diagnosis this unsophisticated quack had the boldness to make the unprofessional observation that I was "a young man and very anxious to operate." It will suffice to state that she followed this revenue-grinding attendant's advice for about a year, when he was at last discharged, and I was again sent for, but too late to do anything more than ease her sufferings with an anodyne, while she was in the throes of death from an infectious peritonitis.

Second in importance only to that of hæmorrhage as a symptom is the offensive discharge. It may be the first symptom to excite suspicion, but it is usually a sign of considerable advance in the development of the disease. It may be absent, and unlike hæmorrhage and pain is not so frequent in cases of non-malignant disease. As an isolated symptom, therefore, it is the most reliable for diagnostic purposes in advanced cases. Indeed, it is quite the rule to make a diagnosis in these cases as they enter the door of our clinics by the odor that attends them. The closer this symptom to the advent of the menopause the greater its diagnostic value. At first the discharge has a sweetish, sickening odor, but later on when ulceration has set in, it becomes horribly offensive, reminding one of putrefying flesh. At this time it is thin and watery, and of a dirty brown color, due to the admixture of blood and shreds of broken-down tissue.

These patients often remain in excellent general condition until the disease has attained extensive development, and in exceptional cases one or all of the symptoms detailed may be absent until the beginning anæmia and approaching cachexia suddenly dawn upon the family physician as evidences of the presence of serious trouble.

The proper treatment of this disease in its early stages consists in the removal of the entire uterus, with as much of the adnexa as may be consistent with safety, and belongs to a department of special surgery, the details of which concern the general practitioner secondarily.

CONCLUSIONS.

1. Cancer of the uterus is a local disease at first, and in this stage is amenable to radical surgical treatment.

2. Two erroneous popular notions lead to postponed examinations, and are responsible for the vast majority of deaths from this disease: The one almost universally entertained by the laity is that pain is an essential symptom of cancer, and the other held by the community at large, including the great mass of family practitioners, is that atypical menopausal hæmorrhage is physiological.

3. The diagnosis at the time the patient first presents herself to the physician is readily made in at least ninety per cent. of cases.

4. In the order of their importance, hæmorrhage, offensive discharge, and pain, are the three cardinal symptoms of the disease, and the presence of one or more of these, in a woman of advanced years especially, should induce the physician to insist upon a local examination as the price of his further professional attendance.

1527 Wallace Street.

CLINICAL NOTES.*

A Case Illustrating the Limitations of Conservative Surgery of the Uterine Appendages; A Gynæcological Case in Which Antistreptococcic Serum Was Employed. Hysterectomy for Bilateral Broad Ligament Abscesses.

BY RICHARD C. NORRIS, M.D., PHILADELPHIA, PA.

A Case Illustrating the Limitations of Conservative Surgery of the Uterine Appendages.

Since the discussion at the Washington Congress in 1894 on Conservative Surgery of the Uterine Appendages, in which discussion Goodell, Polk and others recorded successes and even pregnancy following conservative surgery of the uterine appendages, most gynæcologists have been more conservative in dealing with the lesser grades of tubal and ovarian disease. Ovaries partly destroyed by cystic degeneration, hydrosalpinx, occlusion of the fimbriated ends or stricture of the Fallopian tube, even small collections of pus in the tube have been successfully treated by plastic work which saved for the patient one or both of the uterine appendages.

Quite a large number of successes have been recorded, and in my own experience I have had a few cases that have demonstrated to me the practical value of resecting an ovary, of puncturing and draining a small hydrosalpinx, of dilating an occluded tube and of opening the fimbriæ of a tube and maintaining the opening by stitching back the tubal fimbriæ. The case I report to-night, however, is brought to your notice to show that such plastic work sometimes utterly fails, and thus renders necessary a second operation to effect a cure.

It is quite as important to record the failures as well as the successes following conservative surgery of the appendages.

Miss A., aged twenty-four years, had measles four years ago, followed by pneumonia and peritonitis two weeks after the rash of

* Read before the Philadelphia Obstetrical Society, September 2, 1897.

the measles had disappeared. Her menses occurred at the age of eighteen, have always been irregular, scanty and painful, especially during the past year, when rest in bed for a week at each period has been necessary. Complaints of constant pelvic pain and a yellowish vaginal discharge, sometimes offensive, and has noticed this especially during the last two years.

Upon examination, the uterus was found anterior; the posterior fornix was filled by a large mass, which gave the impression of a distended tube and ovary, very painful and very sensitive. The notes of the operation at the Methodist Hospital are as follows: Right tube distended; right ovary cystic, the size of an orange, and adherent in the posterior cul-de-sac. The left ovary, small and sclerotic, contained several follicular cysts; fimbriæ of left tube are occluded and there is a small hydrosalpinx involving the outer third of the tube. The hydrosalpinx was evacuated and the puncture closed by a fine silk stitch. The fimbriated end of the tube was opened and dilated, and the ends stitched back. Two small cysts of the ovary were punctured and the cavities lightly curetted, the redundant portions of the cyst wall were trimmed away and a fine silk stitch introduced. The right tube and ovary were removed. Convalescence, afebrile and satisfactory in every respect.

The patient passed out of observation, having been requested to report from time to time, as I wished to follow her history. She was told of the attempt to save the left tube and ovary. This first operation was performed in January, 1897. In July the patient appeared with the following history: Since the operation performed in January the relief from pain on the right side has been complete (the side from which the ovary and tube were removed), but two months after operation the opposite side began to be painful, and the pain has steadily increased up to the present time.

Upon examination, a large, exceedingly tender cystic mass was found in the left vaginal fornix. Operation advised. Incision through the old scar found the wound firmly united throughout its entire length. A knuckle of intestine, firmly adherent, about one inch to the left of the incision was released. The pelvic organs were examined and showed the stump on the right side surrounded by a few adhesions and a worm-like body two inches in length, curled over the end of the stump. The mass was ligated and removed. At first it was thought to be the appendix, but closer study indicated

that it was a cystic growth in Gärtner's duct. The left vaginal fornix was filled with a cyst the size of a small orange, which was partly intra-ligamentary. The cyst was peeled out without rupture. The remnant of the ovary was firmly adherent between the layers of the broad ligament at its base. An attempt was made to gather up the broad ligament, and the thickened tube and to ligate *en masse*. It was thought, however, to be better surgery to place two ligatures, one to control the ovarian artery at the pelvic wall and the other near the uterus to control that side of the broad ligament. The remnant of the ovary was enucleated from its bed, and, with the tube, removed. The edges of the broad ligament were whipped together with a continuous suture. Patient's convalescence was afebrile and she left the hospital in the course of three weeks, relieved from pain.

This case is worthy of record because it illustrates the failure that will sometimes follow plastic work upon ovaries and tubes that are not seriously diseased. Here was an ovary not one-fourth of which was found destroyed at the first operation. Its cysts were punctured and drained, thus offering an opportunity for the ovary to repair itself, and yet within six months after the operation rapid degeneration had progressed until a cyst as large as an orange was formed. The result in this case emphasizes the fact that the prognosis of plastic work on the appendages should be guarded, although we should in all instances try to save tubes and ovaries that offer a probability of ultimate repair. The patient was a young girl, unmarried, and it was with a great deal of regret, that I found it necessary to do a second operation, and remove the ovary I had tried to save.

A Gynæcological Case in Which Antistreptococcic Serum Was Employed.

So much interest is attached to the employment of antistreptococcic serum that I have thought it worth while to report a case in which serum was apparently successfully employed, after a bacteriological examination confirmed the diagnosis of streptococcic infection.

Edebohl's report of his Alexander's operations appealed to my judgment, and induced me to employ that operation for a small

number of retro-displacements, movable and not accompanied by adhesions of the tubes and ovaries. While it is true that *suspensio uteri* is an operation more generally applicable to the treatment of retro-displacement, there is a class of cases for which Alexander's operation has distinct advantages. Since the first of April I have found it desirable to perform Alexander's operation eleven times, with thus far most satisfactory anatomical results. In two cases infection of the wounds occurred, and one of these is the case I wish to report.

M.W., a patient in my service at Blockley, was transferred from the medical ward, several months' convalescent from typhoid fever. On examination, I found a movable displacement of the uterus, retroflexion and prolapse of the ovary. Alexander's operation was performed after the technic of Dr. Edebohl, the incisions being closed with buried chromicized catgut. On the evening of the third day the temperature had risen to 101.3-5°; pulse, 120; patient complained of pain in the inguinal wounds. Inspection of the wounds showed areas of pus along the subcuticular catgut stitch, and spreading from the incision a brawny redness, with infiltration and œdema. The sub-cuticular stitches were removed. During the next twenty-four hours the brawny redness involved almost the entire anterior abdominal wall. A culture in agar-agar was made from each inguinal wound, a portion of the catgut used at the operation was also placed in a culture tube of bouillon. I thought at once that the catgut was to blame for the infection. These tubes were sent to the Pepper Clinical Laboratory to my friend, Dr. Kness, who reported the catgut sterile even after several days. There was a prompt growth of streptococci in the tube inoculated with the serum from the infected wounds.

On the third day after the infection appeared 10 c.c. of Marmorek's serum were given morning and evening, in 5 c.c. doses, for three days. The first day no effect was noticeable, either upon the pulse or temperature. The second day's dose was followed by a drop in temperature from 100° to 96° F. and the pulse from 104 to 88. A similar temperature fall was noticed after the third day's dose. The local appearance of the wounds and the reddened surface of the abdomen began at once to improve, first by losing the bright red and angry appearance and then by shrinking of the area of redness. The patient's general condition had meanwhile im-

proved, and with the administration of iron, strychnia and a full diet her convalescence was uninterrupted. The inguinal wounds finally healed by granulation at the areas where separation had occurred. The uterus was held forward in normal position and the anatomical result of the operation had not been interfered with. There were no means of determining the source of infection. During the process of granulation of the wounds three outbreaks of mild infection appeared in the wounds as described in the following notes sent me by the resident physician, Dr. Taggart:

"On July 2 there appeared about the site of the incisions quite a diffuse erythema, which is slightly elevated above surrounding skin, and a little brawny. There is no elevation of temperature or acceleration of pulse. July 4 all redness has disappeared, there is no swelling, and the parts look quite normal. July 10—The patient has been up and about for a few days. The abdomen in region of incisions has again become red and slightly raised at edges. There is no rise in temperature and pulse. On the 17th the abdomen is again inflamed and red and has the same appearance as on previous occasions. This entirely cleared up in two days, and there has been no further outbreak."

It is my opinion that in this case the woman had streptococci in her skin and it was impossible, in spite of careful preparatory treatment to render the field of operation aseptic. The catgut was found sterile by bacteriological examination. Daily observation of the patient during the administration of the serum warranted the conclusion that the serum materially controlled the erysipelalous infection, and hastened convalescence.

During the summer I have had occasion to observe the use of serum in two puerperal cases, and these cases have further convinced me that when called to a puerperal patient about to die from sepsis it is useless to administer serum. Dr. Bryan, in West Philadelphia, called me in consultation in a case where the woman had contracted her infection from her husband, who had facial erysipelas. The woman would not go to a hospital for her delivery, as Dr. Bryan had insisted, and, as he appreciated the danger of infection, he made no vaginal examinations and she had her labor without any contamination whatever so far as her medical attendant was concerned. When I saw the case the child had been buried that day, dying with erysipelas of the face, hands and legs; the woman's

temperature was 105°, her pulse 160 and she was plainly dying from general sepsis. I told Dr. Bryan that, in my opinion, it was absolutely useless to administer serum. However, she received some sixty c.c in the course of forty-eight hours, without any effect whatever, and died, as was of course to be expected. The second case was also one of advanced sepsis, the clinical signs indicating violent infection of the blood current, that speedily caused death, the course of the disease being uninfluenced by the administration of serum. The cases of infection for which anti-streptococcic serum should be reserved are those in which the serum can be used at the earliest possible moment after bacteriological diagnosis, or where there is some clinical evidence of streptococcic infection. After widespread systemic infection the serum cannot avail.

Hysterectomy for Bilateral Broad Ligament Abscesses.

The last case of this report is offered to illustrate the advantage derived from hysterectomy for very violent forms of pelvic inflammation.

J. T., aged thirty-four years, married six years, never pregnant, was treated for pelvic pain and distress, and underwent, at the Woman's Hospital, in May, 1896, an operation of some character, the nature of which I have not been able to determine. This could not have been an abdominal operation, because there is no scar.

An irregular tumor occupied the hypochondrium, a little more to the left of the median line; dull on percussion and surrounded by a zone of tympany. The uterus was anterior, both fornices and cul-de-sac protruding. The pelvis was filled to the iliac crest with a cystic tumor, tender and painful; the mass was larger upon the left than the right side. Patient emaciated, pale, thorax contracted. Pulse, 100 to 112; temperature, 100° to 102°. She sweats profusely and has had marked chilly sensations. The tongue is dry and brown.

Operation, celiotomy, double intra-ligamentary abscesses, the broad ligaments infiltrated to pelvic wall. The greater portion of the tubes and the ovaries are entirely obliterated by widespread suppuration. The cystic tumor was perforated while attempting to separate bowel and bladder adhesions which covered the pelvic

mass. Very foul, thick, greenish-yellow pus flowed over pelvic contents. Intestines were protected with gauze. Very fortunately, at the moment of rupture, the patient was not in the Trendelenburg posture. Intestines had been confined as well as might be with gauze, and every effort was made to prevent the spread of apparently infectious matter. The field of operation was irrigated. After separating widespread adhesions to gain access to the distended broad ligaments, hysterectomy was rapidly performed; the bleeding was controlled by ligatures and clamps, the latter being removed and the bleeding points ligated as the operation progressed. In the depths of the pelvis and the region of the sigmoid and again at the head of the colon there were necrotic areas and pieces of degenerated broad ligament. In an attempt to gently remove a fragment adherent to the bowel, the latter was opened sufficiently to insert the thumb. A fine silk stitch was placed with difficulty, because the slightest tension cut through the necrotic wall of the bowel; gauze and glass drains were placed. During the first five days of convalescence the pulse ranged between 100 and 116; the temperature between 99° and 101° F. Flatus was passed by the bowel, and on the third day the bowels were moved by calomel. On the fifth day it was noticed for the first time that a slight faecal odor appeared in the sinus, and a rubber drain was substituted for the glass tube. The gauze had been removed the preceding day. The drainage tract was gently irrigated daily with normal salt solution through a soft catheter, and the rubber drain was shortened a quarter of an inch daily until it only passed the tissues of the abdominal wall. The bowels were not urged, but at intervals of three days fractional doses of calomel were given, and it was noticed that the faecal discharge from the fistula increased very little with each movement. Three weeks after the operation the faecal discharge had ceased, the bowels were moving regularly without a purge, and a gauze drain was then substituted until the incision healed.

These were the notes made just before going off duty, and I had the pleasure of seeing the patient in the wards the other day practically ready to go home.

The lesson this case gives, I think, is the value of clearing the pelvis of as much of the degenerated tissues as possible, and no plan of treatment to accomplish that can be compared to excision of the broad ligaments and uterus. The adhesions in such cases are very

numerous, and with ligatures placed on both the uterine and ovarian arteries, hemostasis is complete, the greatest possible amount of disorganized tissue can be removed, and the process of repair is more rapid and complete. Vaginal section and drainage, preliminary to celiotomy, are undoubtedly valuable in many of these cases, but only when the patient is too ill to stand a celiotomy.

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EDITORIAL.

DRUG MANUFACTURERS AND THE MEDICAL PROFESSION.

At no other time probably in the civilized history of our profession has the life of the physician been so beset with difficulties and discouragement. In his self-communings to-day he asks not "Who are my friends?" but "Have I any friends?" So desperate and callous has become the fight for livelihood and possession that, if he do not or cannot become a tradesman, with the rest of the world, he is apt to be pushed aside and left alone. If he do yield to the temptation of example and the spur of circumstance and adopt the motto "Self-interest only" as the key-note of his work, he knows that he has prostituted his professional birth-right and has no further claim to the honor of humanity. If he be honest and remember with pride the duty imposed upon the members of a great profession, his very adherence to principle is taken advantage of to his

undoing. If he would give to the poor, because they are his professional heritage, he generally finds the rich in disguise waiting to filch his gift. If his sense of honor prevent his selling his recommendation of a manufactured therapeutic agent, he will find many another less scrupulous professional brother willing to profit by the chance. While he waits for patients to seek his advice, which he has made many sacrifices of time and money to render valuable and efficient, he finds the public prints teeming with advertisements of remedies and prescriptions, not infrequently with *regular* medical endorsements, for "self-cure." Thus he is constantly surrounded by quackery and dishonest pretence which pursue him into his own domain—enemies who threaten his existence and yet whom he cannot honorably fight with their own weapons. Added to this, he is dependent upon lay publishing houses for his literature and must take from them whatever they, as merchants, feel it to their interest to give him; he must also buy his drugs and his instruments from manufacturers who, he knows, have both the knowledge and the power to underbid and to undersell him with the public.

This is the condition which confronts the practitioner of medicine to-day. It is not, however, as a hopeless picture that we would present it to our readers but rather as one, many of whose blemishes and distortions it needs but knowledge and determination to remove. We cannot obliterate all our enemies but we may distinguish, among those who live by us, between friend and foe—between those who wish to treat us fairly and those who claim our friendship with one hand and take from us with the other. If we take up the advertising columns of any medical journal owned by laymen, we will find two classes of advertisers—the one which submits its manufactured articles solely to the judgment of the profession, which refuses to sell otherwise than on the prescription of a physician; the other also claims our endorsement on the value of its product and then takes both and sells directly to the public. Is it just to these two classes of manufacturers that we should receive their goods on the same footing? Is it just to ourselves? Do we not owe to the one the encouragement of our exclusive patronage for his fair dealing and do we not owe it to ourselves to turn our backs upon the advertiser who uses one hand for us and the other against us?

There are many manufacturers of therapeutic agents who belong

to the first class, who faithfully look to us alone for their support; in the second class there are many, we believe, who would willingly withdraw their bids for public patronage and loyally fall into line with those who ask only professional support, if they could once see the profession open its eyes to recognize its friends and smite its enemies. Indeed we doubt if there be one reputable firm of drug manufacturers who would not gladly cast in their lot entirely with the profession, if it made any effort to demand fair play.

We complain that "business is slack" and patients few. Yet we raise not our hands to wipe away one of the most potent causes. Why should patients come to us and pay for a prescription, when they can find an excellent one, with a full list of the indications for its use and with the endorsement of a reputable medical journal, in any morning newspaper? Indeed, why should manufacturers be true to us when we are not true to ourselves?

Let us draw the line now. If drug manufacturers offer their wares directly to the public and thus rob us of our exclusive right to prescribe, let us place them where they belong—in the class of *nostrum venders*, whom the profession can not recognize. On the other hand let us confine our recommendations to those firms who sell only upon a physician's prescription. It will not be long before all medical journals, who would be reputable, will take this cue to their advertising columns.

In another Department of the JOURNAL we have established a *Therapeutic Forum*, by means of which we wish to inaugurate this crusade against the unethical advertising of medical preparations, to encourage all manufacturers who deal fairly by the profession and, finally, to give every medical man an opportunity to obtain *reliable* information as to the merits or demerits of the drugs or other therapeutic agents he may be called upon to purchase. Therefore, we will welcome all personal experience in this regard whether for or against the claims of any advertised article. When we withhold the names of correspondents, at their request, we shall be personally responsible for their standing as reliable witnesses. We will not knowingly receive the testimony of any expert, directly or indirectly in the pay of any manufacturer. What we desire and invite is the independent and unprejudiced experience of reputable medical men.

A moment's consideration will show how valuable this Department should become both to the medical subscriber and to the man-

ufacturer. The medical man can turn with confidence to its columns to find independent expressions of opinion as to the merits of that which he desires to buy. He need no longer feel, as he must so frequently do at present, that he is buying "a pig in a poke."

THE HOSPITAL AND DISPENSARY ABUSE.

Now that the summer vacation is over and the medical societies have resumed their sessions, the prevailing scandal of spurious medical charity will again be seized with a strong hand and strenuous effort made to abolish it. The medical men who are, through self-interest, upholders of this iniquitous effort to deprive the deserving poor of their claim upon our charity and who are at the same time traitors to their order are well known and the machinations, by which they succeeded last spring in defeating an entirely just and efficient legislative measure of alleviation, are now known and have been thoroughly exposed.

Already is organized effort under way to make an end of the abuse this winter and the fight will be kept up unflinchingly until the *will of the majority* has vindicated its right to govern. In the meanwhile, evidence of the crying need of reform is constantly obtruding itself. In September last five vacancies in the position of School Physician to our public schools of this city were opened to competitive examination. The salary was thirty dollars a month and the work required was daily visits and examination of the sick, in the school to which each man was assigned, and daily reports to the Board of Health, necessitating besides many hours of clerical labor. The physicians came in contact with the children at the school only and had therefore no opportunity to increase their private practice through the parents or friends of the pupils. Yet, there were one hundred and seventy-five applicants for these five positions, embracing men of all ages and of years of experience. Among them were many who had been honor men in their respective classes and one of the successful competitors had graduated first in his class at the medical school, had passed eighteen months as interne in one of our best hospitals and had been in private prac-

tice for several years. What a commentary upon the present Free Dispensary and Hospital System! But more striking still is an article in *The New York Sun* of October 1, 1897, purporting to be an interview with Dr. Stephen Smith, Commissioner of Charities of New York, and headed "For Reform in Charity." We quote from it as follows:

There are two chief abuses, he says, which he will attack. One of these is the use of public and private charities by persons who are not in need of such help, and the other is the establishment and extension of charitable institutions whose main purpose is the maintenance of their founders, officers, and attendants. * * * * *

His inquiry showed the extent to which the public now resort to the free dispensaries. In 1791, when the first dispensary was opened at Nassau and Beekman streets, and for a great number of years thereafter, the percentage of persons who resorted to it for free treatment was but one per cent. of the population. This percentage increased gradually until the early sixties, when the city was districted by mutual consent among the seven dispensaries then existing, but it did not go much above 1½ per cent. After that the growth in the number of dispensaries, under the various guises of medical and surgical clinics, church charities, and outdoor relief by the hospitals, was so rapid that it was difficult to keep run of them, and their patients increased in much greater proportion. There was often a rivalry between the institutions, and under such stimulation persons who otherwise would never have thought of asking for charity became regular applicants. *The number grew until a year ago 900,000 individuals were treated in the free places in this city, or more than half of the population.*† * * * * *

"There are about 2,000 charities of one sort and another in this city alone," said Dr. Smith yesterday. "Conducted as they are, largely without State supervision, frauds flourish both inside them and among their beneficiaries. The work of investigating the characters and needs of the applicants for charity is now carried on systematically only by the Charity Organization Society. Its work is admirable, but it is not a work that should be left to a private organization. The place for that work to be done is right here.

"Sooner or later nearly all of the unfortunate come here, and this is the place where we should be prepared to learn all about them. Our records would then be public property, and at any moment any person or institution that needed information about an applicant could procure it."

Verbum sapienti!

†The *italics* are ours.—EDITOR.

CORRESPONDENCE.

Ovarian Cysts in the Negro.

WASHINGTON, D.C., September, 1897.

To the Editor of the American Gynecological and Obstetrical Journal:

SIR: The undersigned requests information in reference to multilocular ovarian cysts in negroes. In his experience they are very rare, while parovarian, papillomatous, dermoid and broad ligament cysts are occasionally seen. Letters have been addressed to nearly all the members of the Southern Surgical and Gynecological Association, who should have by far the most experience in treating these cases. The answers thus far received, for the most part, agree with the experience of the writer. It is earnestly requested that surgeons generally will aid in collecting enough information to be of value, as there seems to be no authentic record of cases nor even of an effort to investigate the subject. Gentlemen having operated for ovarian tumors occurring in negroes will please state the number of cases, age, size of tumor and the color of the patient.

I. S. STONE,
1449 Rhode Island Avenue,
Washington, D. C.

REVIEWS.

The Diseases of Women. A Hand-book for Students and Practitioners. By J. BLAND SUTTON, F.R.C.S., England, and ARTHUR E. GILES, M.D., BSc. London, F.R.C.S. Edinburgh. Published by W. B. Saunders, Philadelphia.

Medical works are divided more or less definitely into two classes: Those that set forth the ideas and describe the methods employed by the author and omit those that do not commend themselves to him. The other class of writers lay before the reader the various theories that have been presented to the profession and the methods devised for the accomplishment of a given operative procedure, and either permit him to take his choice or recommend that which has met with most success in the author's hands.

The volume before us is decidedly of the first class. From first to last it is marked with the individuality of the authors, and their views are stated in no uncertain terms.

Dr. Sutton's previous work on the ovaries and tubes should entitle to the highest respect his opinions on the subjects, and in the present volume the chapters upon these diseases are most excellent and in keeping with his previous writings. The treatment of abdominal surgery is altogether praiseworthy.

The importance attributed to plastic surgery by English gynecologists and the methods employed by them differ so materially from the accepted American ideas that their writings on this subject are of little value to us.

The chapters upon the anatomy and physiology of the reproductive organs are clearly written and well illustrated.

In the chapter upon the examination of the pelvic organs we are surprised to note the prominence given to the cut of the Ferguson speculum and the length of the description and directions given for its use. It would seem that this instrument which to us is of historic interest only is the one most commonly used by our cousins over the water.

The consideration of the diseases of the ovaries and tubes and of the uterus which occupies the greater portion of the work is extremely interesting and valuable reading.

To some of the author's teaching we are absolutely opposed; as, for instance, in describing lacerations of the cervix, he says: "A lacerated cervix does not, as such, give rise to symptoms, except occasionally bleeding in recent cases." Again: "From time to time lacerations have been held responsible for many reflex neuroses; we believe this to be entirely erroneous; for although such neuroses have disappeared after repair of the cervix, the improvement must be attributed to the simultaneous curing of the inflammatory condition."

We cannot pass this without entering a protest. In the description of gynæcological operations the chapters devoted to the abdominal work are in every way more advanced and better than those describing the plastic procedures. This is not surprising considering the small amount of attention that this branch seems to receive abroad.

For the repair of a lacerated perinæum by the secondary operation but one method is mentioned, and that is a modification of Tait's, and we are told that: "An average operator can do this operation in from ten to fifteen minutes with certainty of success." The value of this would seem to depend upon what is called "success." The Tait method, with modifications, has had a very extensive trial in this country, and the "successes" or what we would call "successes" have been so very few that it has been practically abandoned.

The volume is gotten up in fine form and well illustrated, and, with the exceptions mentioned, is an excellent hand-book for students and a valuable addition to the library of any practitioner.

We predict for it an extensive sale.

H. M. G.

A Text-Book of Diseases of Women. By CHARLES B. PENROSE, M.D., Ph.D. W. B. Saunders, Philadelphia, Publisher.

While the volume before us was written for medical students, it possesses qualities that should be appreciated by practitioners as well.

In most instances but one plan of treatment is recommended for each disease, the author hoping to avoid confusing the reader who

consults it for a practical guide. The chapters are short and concisely written. The teaching is eminently practical and up to date. The chapters that especially commend themselves to us are those devoted to plastic surgery, to the diseases of the bladder and urethra, and those pertaining to the technique of gynæcological operations.

We are pleased to note the prominence and space that is devoted to plastic work, because there seems to have been a tendency of late to slight this important branch. The descriptions of these operations we consider the best that have appeared in recent years.

The chapters upon the diseases of the urethra and bladder is especially valuable because these subjects are neglected in most text-books, and their importance is not appreciated by the majority of practitioners. A careful and scientific examination of these organs has thrown light upon many obscure cases of pelvic disease.

Unusual care and space have been given to the technique of gynæcological operations and these are described with a faithfulness to detail that is commendable. The many illustrations add much to the elucidation of the text. The typographical work is excellent, and the general form and appearance of the book is admirable.

We predict a large field of usefulness to students and practitioners from this work.

X. Y. Z.

Essentials of Obstetrics. By CHARLES JEWETT, A.M., M.D., Sc.D., and HAROLD T. JEWETT, M.D. Lea Brothers & Co., Philadelphia, Publishers.

While there has been an unusual number of books of this description published within the year, and for the most part good ones, still this one is somewhat different from the rest, and, considering its object and scope, the best of its kind. It is practically a second edition of the "Outlines of Obstetrics," which appeared a few years ago, slightly enlarged and elaborated. As the author says, his object has been to place the essentials of obstetrics within easy grasp of the student. With this aim in view conciseness and clearness are its characteristic features, and a systematic and logical arrangement has been observed. It is preëminently practical, and will be a very

valuable working guide to the young practitioner as well as an assistance to the student in following the didactic and practical teachings of the college course. Theoretical discussions, matters of merely historical interest and elaboration of details, have in the main been purposely excluded. The definitions throughout are terse and exact, while its rules for guidance are safe and scientific.

The illustrations are, for the most part, old ones, and hardly seem good enough for the text, particularly in consideration of the extreme conciseness of the latter. For instance, a cut of Byrd's method of resuscitation would go far towards elucidating the three and a half lines given to a description of this most useful method.

The typographical work and binding are good and the size convenient.

E. M. P.

About Children. Lectures Given to the Nurses in the Training School of the Cleveland General Hospital. By SAMUEL W. KELLY, M.D. Published by the Medical Gazette Publishing Company.

The author publishes the course of lectures delivered to the nurses in the hope that they may be useful to other nurses, to intelligent parents and even to medical students and practitioners. In this we think that his hopes will be realized. In lecturing to nurses it is always difficult to estimate the amount of knowledge that they possess of anatomy, physiology, etc., and of the technical terms used in discussing the diseases. In order to pave the way for the suggestions given for nursing in special diseases and to enable the nurses the better to understand why they should do thus and so, and therefore act intelligently, a short description of the peculiarities of the anatomy and physiology of infancy and childhood is given.

The lectures are six in number. The first is devoted to the peculiarity of the anatomy in infancy and childhood. The most important part of this is the praiseworthy effort that is made to impress upon the reader the true capacity of the infant stomach.

The second lecture is devoted to the definition of terms, to growth and development and to physiology.

The third chapter treats of various pathological conditions, deformities, diseases, accidents and injuries.

In the fourth chapter symptoms are discussed.

The fifth treats of the general management of sick children and the nursing in special diseases.

In the sixth, "Pasteurizing," sterilizing and modifying milk, and artificial feeding are considered. General remarks upon the disposition, habits and management of children are also included.

The typographical work is good, and the general appearance of the volume is very attractive.

It is published by a Company composed practically of medical men in the interests of the profession. We hope to see many and more ambitious works published under the same auspices.

The volume by Dr. Kelly should have a large sale.

H. M. G.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, September 2, 1897.

The President, E. E. MONTGOMERY, M.D., in the Chair.

Clinical Notes.

BY RICHARD C. NORRIS, M.D.

(See page 572.)

Treatment of Uterine Prolapse, with Illustrative Cases.

BY WILMER KRUSEN, M.D.

(See page 553.)

DISCUSSION.

Dr. R. C. NORRIS: I have been very much interested in Dr. Krusen's paper. He has gone into the subject very thoroughly. One or two suggestions occurred to me as he was reading the paper. As I understand him, he recommends an extensive Emmet's operation on the posterior vaginal wall as a part of the surgical treatment of complete prolapse of uterus. I did this myself at first, making extensive denudation up the sulci in several cases, and found sooner or later that there was a recurrence of the prolapse, and these failures induced me to utilize Hegar's operation, which I think is very useful in treating complete prolapse, for certain anatomical reasons. As I understand Emmet's operation, the principle is to draw the muscles and fascia down and tack them practically to the rectum so as to bring them back into their normal anatomic relation. Dr. Noble brought to our notice last spring, a method of operating for rectocele that he considered an improvement on the Emmet operation. In my opinion, his suggestion obtains what practically is accomplished by Hegar's operation, an operation not to be compared to Emmet's for accurate anatomical repair of a relaxed pelvic floor. Noble's plan was to bring together and unite *in front* of the rectum as much as possible of the levator muscles, thus making an incorrect anatomical relation, but of no consequence to the woman who has passed the stage of childbearing after

Hegar's operation. We have a muscular floor, which is not correct anatomically but which gives firm support. This procedure helps to prevent recurrence of complete prolapse far better in my experience than the ordinary Emmet operation, however far up the sulci you carry the denudation. Vaginal hysterectomy for complete prolapse of uterus, in my experience, has sometimes been followed by varying degrees of prolapse of the vaginal walls in spite of additional plastic operations, that is quite as distressing as procedentia of the uterus. Dr. Baldy, as some of you will remember, devised an operation in which the cervical stump after abdominal hysterectomy is stitched to the ovarian stumps. In two cases following that technic at my hands there has been no recurrence. For cases past the childbearing age I prefer Baldy's operation, or ventro-suspension, the uterus being firmly anchored with buried silkworm gut sutures and extensive anterior (Martin's) and posterior (Hegar's) colporrhaphy. When Hegar's operation is utilized for procedentia it should be remembered that we must lay bare the muscles and the fascia of the pelvic floor and unite them in front of the rectum. The main point in my discussion is to call attention to the value of Hegar's operation on the posterior wall, of finding the torn ends of the muscle and fascia and removing them from their natural anatomical relation by uniting them in front of the rectum, thus making a firm muscular wall and dense cicatrix to support the uterus.

For slight prolapse and backward displacement of the uterus in childbearing women no operation on the posterior vaginal wall can compare with Emmet's.

Dr. E. E. MONTGOMERY: There is probably no subject of greater interest than that of the treatment of uterine prolapse. It is a condition, as we know, very frequently met with in the various degrees mentioned in this paper to-night. The difficulty in the great majority of operations, however, is that they are directed to the lower portion of the vaginal canal. The upper portion, as has been mentioned, is not narrowed or constricted as the heavy uterus sags into it, and sooner or later brings about absorption of the newly-united tissues and the redevelopment of the disorder. In the great majority of cases that have been recounted to-night this objection does not occur, for the reason that the operation has been done in the earlier rather than the later stages of disease. I know

of no class of cases more difficult to treat, or more difficult to insure a perfect and complete result subsequently, than in the cases of procidentia where the vaginal wall has been pushed off from its attachments, where you have a more or less heavy uterus, and intra-abdominal pressure tending to constant development of hernia. In such cases I think abdominal hysterectomy preferable to vaginal, for the reason that we are enabled to use the stump of the cervix by attaching it in the method that has been suggested, or better, fixing it to the abdominal wall in the line of the wound, in that way insuring a firm union. It is not desirable this operation should be performed on a woman who is still in the childbearing period, unless her condition is so distressing and uncomfortable that life and health are endangered by the continuation of the condition. I have seen several cases in which a lateral denudation of the vagina extending up the side to the cervix, affords an opportunity for lateral fixation of the vaginal canal, and at the same time constricting it, sutures being so introduced as to lift up the anterior or posterior wall, whichever may be the most relaxed. This enables us to fasten the vaginal wall to the levator ani muscles to a certain extent, and in that way restore the support. The operation should be supplemented either by ventro-fixation or supravaginal amputation of the uterus and fixation of the stump. Even operations as thus suggested are not always successful, as I have found to my misfortune in one case, a patient in whom there was extensive intestinal hernia, in whom a dissection of the recto-vaginal septum had taken place by the pressure of the intestines, leaving a large opening between the uterus and the sacrum. I was fearful at the time there would be a redevelopment of hernia; even though the uterus was amputated and the stump fixed firmly to the anterior abdominal wall, there has been a redevelopment of the hernia forming an extensive rectocele. I endeavored some time ago to secure from this patient permission to make incision through the posterior wall of the vagina and pack the pelvis with iodoform gauze, with a view of thus obliterating the peritonæal cul-de-sac, but was unable to secure a second operation.

With regard to mechanical means, we all know how unpleasant is the continual wearing of an instrument, whether it is intra-vaginal, or an instrument with external support. The external support is the more annoying, and it is certainly very distressing and uncomfortable for a woman to be thus harnessed up and obliged

to go through life in such a condition. It affords, however, a means for relief of cases which would otherwise be unwilling to be treated, or in whom the condition of health is unfavorable for operative interference.

Dr. JOHN C. DA COSTA: I am glad to hear Dr. Krusen take the conservative view that he does of procidentia and prolapse of the uterus. I note particularly that in the fifteen instances he did but two hysterectomies and one of these was for pyosalpinx. We used, before the days of ventro-suspension was known, to treat these cases and sometimes with very good results. We always gave them a preliminary treatment before operating. There were some means of treatment which seem to have gone entirely out of date: One was decreasing the size of the uterus by bleeding, which would certainly modify its character, then curetting; the other was by the actual cautery. I remember seeing Dr. Getchell, twenty years ago, at the Jefferson, cauterizing the uterus; and I have done it myself a number of times without giving ether. He had little cones made of charcoal and saltpeter put on the end of a stick and burnt holes right into the cervix which produced a rapid involution of the whole uterus. If you have Courtney's book on the Uterus and Ovaries (edition of 1883, page 211) you will find that he uses irons with points to them, which he heats red hot and with them cauterizes the uterus. The preliminary treatment, I think, is a very important thing in cases both of prolapse and procidentia. We have these conditions: first, to restore the uterus; then to reduce its bulk, and lastly, to restore the supports that nature originally gave it. Generally it is a pretty easy matter to restore the uterus to position. I must confess I do not like pessaries, for they ulcerate the vaginal walls, but I like tampons of either wool, cotton or a sponge wrung out in a saturated solution of alum and tucked in in the morning; this will keep the uterus up all day. Alum not only keeps the vagina sweet and clean but it reduces the size of the uterus as well as of the vagina. When you come to the operative treatment after certain preliminary treatment, I think you find most of these cases need amputation of the cervix. Most of the cases it has been my fortune to see have had laceration, generally bilateral, erosion and hypertrophy. By doing amputation of cervix first, dealing with the mucous membrane of the vagina, you will be surprised to find when you take stitches out how reduced the uterus is in size.

Then we come to anchoring the cervix by operation in the vagina. The operation Dr. Norris speaks of has this objection: It makes an acute angle, it turns the vagina into an inverted cone, which is the most favorable condition for descent of the uterus. There was an operation which I saw Martin, of Berlin, do some years ago which seems to have merit. After doing the perinæal and cystoicle operation he denuded clear to the cervix or above, taking a broad strip on each side of the vaginal wall, he then took the free edges of this fresh wound and joined them by sutures, taking all the denudation on each side. You can either do that or bring the opposite raw surfaces together and unite by sutures, which is nothing but a modified Le Fort operation. The anterior colporrhaphy by purse-string I do not like but prefer the oval denudation. I did the purse-string operation a number of times, and every one seemed to slough or the stitches to tear. The operation I do now is the oval or ellipse, not with buried rows of catgut sutures, because in several cases where done by other operators I have seen these sutures produce extensive sloughing, but I use Chinese silk and enter the stitch about a quarter to a third of an inch away from the edge of the denudation, keeping it buried the whole way across the denudation and bringing it out on the other side, not a row of continued buried sutures, but a row of interrupted sutures. I have had very good success with this operation, and do not see any reason for changing. That oval operation on the anterior wall, with a good perinæal operation (I do not care whose you do), will give good results. With good denudation of the walls of the vagina clear up to the neck of the uterus I think you will get good results. I will cite two cases, one, a woman, thirty-six years old, who, during the previous ten years had only been comfortable twice, that is, during two pregnancies when the uterus became of such size as not to be able to come down, but which, after the involution following labor, popped out again. In that woman I did amputation of cervix, with anterior and posterior denudation of vagina. I saw her six months after operation and again two years afterward and she was perfectly well. Another woman was sixty-three years of age, and long after the menopause, on whom I operated. That woman recovered perfectly, and there was no descent five years after operation. These two were done without ventro-suspension.

Cancer of the Uterus and the General Practitioner.

BY J. M. FISHER, M.D.

(See page 563.)

DISCUSSION.

Dr. MONTGOMERY: I have known many cases in which extensive ravages from malignant disease have taken place before the attention of even the general practitioner was invited. Other cases in which the physician has treated the patient for a length of time for ulceration of the womb, for possible climacteric, and has given them, as has been suggested, remedies with a view of ameliorating symptoms. The expected change of life, however, in such cases, is from this sphere to another one, and when the patient is made to recognize the serious character of the disease it is beyond hope of relief. It has been my misfortune to see a case of this kind to-day, a woman who had been treated for several months; the entire cervix was destroyed and the disease extended along the broad ligament. The anterior wall of the vagina was involved and infiltrated, affecting the bladder. Here was a case which had been treated by the physician for a year, and we can hardly realize how any physician could be misled in such a condition. Not unfrequently the physician is liable to be mistaken from the fact that the patient does not suffer pain. I saw a patient but a short time ago, in whom the entire cervix was destroyed, in whom the pelvic and inguinal glands were involved, and this patient had at no time suffered pain. I have seen patients in the last stages of disease with the uterus almost entirely destroyed, the cervix gone, the uterus itself a mere shell, in whom pain had not been experienced, so we cannot consider pain as an absolute and certain symptom of the disease. The bloody discharge, tendency to hæmorrhage, is a symptom which should always awaken suspicion and if examination discloses no disease in the cervix, the cavity of the uterus should be explored, preferably by the finger after the organ has been well dilated. In this way we will find a hardened, indurated base, which has been infiltrated by the malignant disease. The dilatation of the uterus thus affected does not readily take place, so this is a very accurate and definite method of arriving at a diagnosis.

Dr. G. I. McKELWAY: Dr. Fisher has spoken of the fact that very often this condition is not diagnosticated until too late. For seven years I have been one of the gynæcologists to the Philadelphia Hospital, having under my care such cases of cancer of the uterus as come to that hospital, and during my service in these years no operable case has been admitted to my wards, and I do not think that any of my colleagues has ever had any. There are many cases admitted, but they invariably come too late for any radical help to be given them. This only strengthens what Dr. Fisher has said concerning diagnosis.

I remember that in his clinics Dr. Will Goodell, when he would have a case of fibroid of the uterus in a colored woman, would often say that these women of color were exceedingly susceptible to fibroid tumors, but that he had never had a case of cancer of the uterus in a colored woman. I think the impression obtains to some degree that cancer of the uterus does not occur in negroes. This is not the fact. I have had such cases, and have no doubt other gentlemen here have also had them. It is also usually believed, I think, by the general practitioner, that cancer of the uterus occurs only in women who have borne children and at the time of the menopause and not in young women or virgins. This also is an erroneous idea. It does occasionally occur both in virgins and in young women.

Dr. JOHN C. DA COSTA: I am glad to hear Dr. Fisher read such a sound, common-sense paper as he has given us to-night. The feeling is too prevalent that cancer only occurs at the menopause, and that these hæmorrhages are physiological and not pathological. We see instances of this all the while. A very sad case came to my notice to-day in a single woman, who has been sick for two or three years. She has been treated symptomatically and no examination was made until within a month or two; she then came to Philadelphia and on examination to-day I found a totally inoperable case of cancer of the body of the uterus, with neck enlarged and uterus fixed and pelvic organs involved. I think we should bring to the notice of general practitioners the importance of examining every one of these cases when hæmorrhage occurs. We will save a great many of these women because they will be taken then to the specialist who will remove the disease. Most of these cases are curable if taken early. We see many in which there is no return after two, five, and sometimes fifteen years.

Dr. NORRIS: It is Dr. Fisher's aim no doubt to impress upon the general practitioner the necessity for early diagnosis and no one practicing gynæcology feels more keenly on that subject than myself. While he was reading his paper I referred to my record book, which I happen to have with me, of cases treated this year, and I find that there were in my private practice and hospital services in the Methodist and Blockley Hospitals fourteen cases of malignant disease of the uterus which could not be radically operated upon. A few of them could be only curetted. In that period I have found but two cases which seemed to me to warrant hysterectomy, and I have a case that I shall operate on to-morrow that I fear can only be curetted. Here are fourteen or fifteen cases too late for radical treatment and only two cases in which I could operate. This only shows that the number of inoperable cases must be very large, with such a proportion coming in my own not large experience. The total number of lives lost by delay in diagnosis is certainly greater than it should be. We should impress upon the general practitioner that by sending every woman over thirty years of age who has uterine hæmorrhage to some one capable of making a diagnosis of carcinoma he is doing what is best for the patient and for himself.

Dr. FISHER: My object in bringing a paper before this society on such a subject was because I consider specialists in this line of work are the proper persons to discuss the responsibilities of the general practitioner in reference to this disease, and that their opinion will influence the family doctor in securing the proper services in this particular line in time to save the life of the patient suffering from this dread disease.

Report of a Case of Puerperal Pelvic Cellulitis.

Dr. WM. E. PARKE: The following report derives its chief interest from the fact that the inflammation was limited entirely to the broad ligament and did not include the peritonæum or other pelvic contents:

Mrs. D., the mother of six children, was attended at her last confinement by a midwife, three weeks before I saw her. The labor was said to be uncomplicated, but a douche was administered on the following day, and she was unable to leave her bed on account of pain at the usual period of a week or ten days subsequent to de-

livery. During the latter four months of gestation she had suffered with pain in the left inguinal region, which became intensified after the birth of her baby. A physician, who was summoned at this time on account of pain, prescribed, among other things, an opiate. When I first saw her three weeks after the birth of her baby her condition was as follows: The abdomen was bloated up to nearly the size of pregnancy at term; temperature, 101°; pulse, 112; the tongue was deeply furred; there was no nausea or vomiting and constant *trenesmus* of bowel and bladder. The skin was covered with perspiration, and she stated that she had had some chilly sensations on the previous day, but no positive rigor. A pelvic examination showed a slightly lacerated cervix, a muco-purulent leucorrhœa, and a mass to the left of the uterus of unusual density. This organ was pushed somewhat to the right and the cervix held immovable. The upper limits of the mass could not be definitely outlined, owing to the bloating, the tenderness and the thickness of the abdominal wall. However, the leaky skin and elevation of temperature, added to the other symptoms, led me to believe that the mass had begun to suppurate, and an operation was advised. Dr. Jos. Price now saw the patient, and concurred in the necessity for an operation. On the following day the abdomen was opened and the mass found to be a thickened and indurated broad ligament. There were no adhesions in the pelvis, either of bowel, omentum, tube or ovary. The fundus of the sub-involuted uterus was movable, but the lower part of the body and cervix were firmly held by the immovable exudate of the broad ligament. The tube was scarcely congested and the fimbriated extremity was open. The ovary, pale, scarred and the size of a hickory-nut, was somewhat firmly held by the fixity of the broad ligament. The peritonæum was smooth and shiny. The right side was normal. The abdomen was closed without the removal of any organ, and the mass approached from the vagina. A crescent-shaped incision was made into the vault of the vagina, a sharp-pointed pair of scissors thrust into the mass, the blades separated and then withdrawn. As there was no escape of pus I still further enlarged the opening with my finger, burrowing through the mass from the side of the womb to the pelvic wall. No cavity was discovered, and there was very little flow of blood. The opening was packed with gauze, which was removed and replaced at intervals of two days. The subsequent

course of the case was not marked by any complications. The mass has diminished very much in size, but has not at this date (about five weeks after the operation) totally disappeared. The uterus is now somewhat drawn to the left.

This is one of those cases in which the cellular tissue and the lymphatics of the broad ligament become the seat of inflammation, the source of the inflammation being, no doubt, a mild infection from the torn cervix. This condition is found by far the most frequently in puerperal patients, but it is possible to arise after operative procedures on the cervix. Whether the process goes on to suppuration or whether it does not doubtless depends on the virulence of the infecting agent. The ultimate disappearance of the mass is to be expected.

In 1894 Dr. Noble reported to this society five cases of pelvic cellulitis in which the diagnosis was verified by an abdominal section, and a year later recorded sixteen additional cases which had occurred in the practice of other operators, and which had been verified in the same manner. One of these cases followed an operation on the cervix.

Specimen of a Case of Extra-Uterine Pregnancy.

Dr. RICHARD C. NORRIS presented a specimen of extra-uterine pregnancy. He said: This is a specimen of a case I operated on to-day. The patient came to the city on Friday, and contemplating a journey to California, was advised by her physician to consult me. She gave the following history: Thirty-four years old; dysmenorrhœa and pelvic pain during the past six years. Sterile throughout her married life of four years. Her second marriage occurred last June. She menstruated on the 30th of May, was married on the 8th of June. On the 4th of July was stricken with an intense pain in her stomach and was taken home. Her physician administered several hypodermatic injections of morphia. She began to have bleeding from uterus, which had continued up to the time she entered my office on the 28th of August. She was in bed some three or four days after this first attack, and within ten days, while in church, was again stricken with severe pain in right side, was compelled to go to her home and received hypodermic injection of morphia.

On ten different occasions she had these attacks of pain, and fol-

lowing one of them she was confined to bed for a period of three weeks. Her physician insisted that she had had a miscarriage, treated her for such and on one occasion tamponed the uterus or vagina with gauze. The history was very suggestive, and on examination I found quite a mass on the right side of the uterus which was fixed by inflammatory adhesions. A diagnosis of ruptured tubal pregnancy was made from the history and the physical signs. There was a history of moderate pelvic inflammatory disease, antedating her second marriage.

The specimens are a beautiful example of an extra-uterine pregnancy with the fœtus. They are fresh and therefore I present them to-night. Rupture occurred directly downward into the layers of the right broad ligament. The clot containing the fœtus was shelled out from the folds of broad ligament. The primary rupture occurred in this case on the 4th of July and the operation on the 2d of September. On the left side there was an hæmatoma of the ovary which contained at least two or three ounces of dark fluid blood.

The important point in the operation for this class of cases is the technique of dealing with the intraligamentary hæmatoma. Some operators prefer to attack such a case through the vagina. I found it quite easy to ligate the ovarian artery close to pelvic wall, and at corner of the uterus after the adhesions had been separated. The omentum had to be ligated off and carried out of the way. The bladder, which was drawn up and adherent to the omentum, was pushed back to its normal position after separating adhesions. Having passed my ligatures mentioned above the broad ligament was encised and the clot containing the fœtus was readily shelled out from the folds of the ligament. The adhesions were tremendous in all directions, bled profusely and down at the bottom of this cavity between the folds of the broad ligament I was fortunate enough to catch a spouting vessel. The oozing was so extensive back of the cervix that it seemed desirable to drain with a glass tube. Her pulse and temperature to-night are normal and promise a good convalescence. (Two weeks after the operation the patient is thoroughly convalescent.)

Official transactions.

FRANK W. TALLEY, M.D., *Secretary.*

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL
SOCIETY.

Stated Meeting, September 17, 1897.

The *President*, ADDISON H. FOSTER, M.D., in the Chair.*Embolism of a Branch of the Superior Mesenteric Artery.*

Dr. WELLER VAN HOOK: This specimen is one that was removed from a patient upon whom I operated last night. I saw the patient with the attending physician, Dr. Venn, at eleven o'clock. The patient was a man, fifty-two years of age, a Polish laborer, who had been feeling badly for several days. He complained of vague pains about the body, but they were not localized. Yesterday morning (September 16), at eleven o'clock he was attacked with a sudden and extremely violent pain in the abdomen, chiefly localized in the right iliac region. The pain was intense in spite of the use of morphine to relieve it. When Dr. Venn saw him in the evening he thought the patient had peritonitis, which radiated apparently from the right iliac fossa. Tenderness was extreme, and tympanites set in over the entire abdomen. When I saw the patient with Dr. Venn he had a temperature of 104° , pulse 130. A diagnosis was made of peritonitis, and appendicitis was thought to be its origin; in fact, we thought we had a case of fulminant appendicitis with rupture of the appendix.

Operation: The incision was made at the usual site for appendicitis, and the appendix was searched for with the finger, but without success. The usual exudate surrounding the appendix was not to be felt. A thin, straw-colored fluid mixed with red corpuscles burst out. Flakes of fibrin were also mixed with the fluid. The visible intestinal coils were injected and at points covered with flocculent material. I was in doubt as to what was the trouble, and why I could not feel the appendix. Presently a distended intestine presented at the opening; I drew it up, and excised the piece I show you. The coil of intestine was gangrenous, patches of greenish dis-

coloration appearing here and there over its surface. On drawing this piece of intestine out only the slightest force was exerted. It was at first a matter of doubt as to what could be the cause of the gangrene, since no strangulation or intussusception was noted. One end of the coil of intestine was slightly contracted for about an inch, and the remaining portion was dilated. I suspected from the appearance of the coil of intestine, and from the fact that none of the ordinary causes of gangrene were present, that the case was one of embolism of a branch of the mesenteric artery. This opinion was confirmed by the fact that when I resected the intestine there was no hæmorrhage excepting a venous hæmorrhage from the large dilated veins in the mesentery, and a slight amount of hæmorrhage from the healthy ends of intestine left. The hæmorrhage from the mesentery ceased immediately after the specimen was removed; in other words, the blood that came out was from the specimen, and not from communicating mesenteric veins. A few lightly-applied ligatures were sufficient to stop the hæmorrhage completely.

I believe the case is one of embolism of a branch of the superior mesenteric artery. The specimen in itself is not of great interest. It is simply a gangrenous piece of intestine which has undergone extreme congestion on account of the mechanical relations of the circulation. The peritonæal surface at points is devoid of its usual shiny appearance and presents a greenish color. Œdema is excessive, the mesentery being much thicker than it should be.*

The ends of the intestine were not reunited but were fastened into the abdominal wound, on account of the patient's depressed condition.

Large Ventral Hernia with Intestinal Adhesions and Enteroliths.

The next specimen I have to present is in connection with the paper of Dr. Goldspohn. The woman from whom it was removed was thirty years of age. She had borne several children, was operated on four years ago by another surgeon for some ovarian or tubal difficulty, and the appendages were removed. She was a fleshy

*This patient died after 48 hours. There was vomiting and singultus; but intestinal contents continued to escape until the last from the artificial anus.

woman, weighing probably 150 or 160 pounds, although short, and the abdominal wall did not close properly at that time, owing largely to her extreme obesity and to the fact that wound healing was not smooth. Suppuration occurred because drainage had to be used, and a large ventral hernia ensued. This hernia troubled her very much up to the time I saw her, about four months ago, having enlarged so that it probably held a gallon of material. In the mass was an irregular hard body shaped like a "pretzel." It could not be reduced into the abdominal cavity. The patient complained of great pain in the side and all of the symptoms which usually occur from imperfect closure of the abdominal wall. She did not complain of any symptoms referable to intestinal obstruction. Upon opening the ventral hernia this mass presented, consisting of twenty-six inches of small intestine, in which are two large enteroliths. I have cut a window in the side of the intestine, so that one of the hard masses can be seen. Adhesions had taken place between the intestine, skin and subcutaneous tissue, so that it was impossible to reduce the mass without cutting off also a piece of skin. I attempted to separate the adhesions between different parts of the coil of intestine without success, and at last determined that the only feasible method would be to excise the coil of intestine. This excision was effected without any special technical difficulty, although a great many mesenteric vessels had to be tied. End to end suture was made according to the ordinary rules of enterorrhaphy with needle and thread, which I believe to be the best thing to use except in a few rare cases where extreme haste is required. The patient recovered except for a slight fistula which is now, four months after operation, much smaller than it has been. The abdominal walls were closed with buried sutures in tiers.

DISCUSSION.

Dr. RUMPF: I would like to ask Dr. Van Hook what he thinks was the cause of the embolism of the mesenteric artery.

Dr. VAN HOOK: That is something I cannot explain.

Radical Cure of Large Ventral and Umbilical Herniæ in an Adult by an Improved Technique.

BY ALBERT GOLDSPOHN, M.D.

(See Original Article in the September Number, page 301.)

DISCUSSION.

Dr. M. L. HARRIS: The herniæ under consideration have lately received considerable attention at the hands of gynecologists and surgeons, an attention certainly warranted by the nature and importance of the subject.

Concerning the predisposing and exciting causes of umbilical herniæ, the essayist's statement contains the usually accepted facts. The numerous causes of ventral hernia, or hernia post laparotomiam mentioned, may be practically reduced to two, namely: sepsis in the wound and imperfect coaptation of the several layers in closing the opening in the abdominal walls.

Each of these may be unavoidable.

The first is the more important, as shown by Abel in his report of Zweifel's cases.

The principal part, however, of the essayist's paper is that which deals with the radical cure of these herniæ by operation and, as stated, by an improved technique. The operation or method proposed is in brief: Omphalectomy, with restoration of hernial contents, followed by closure of the wound with long silver wire "tension" sutures and isolated buried sutures of the individual layers forming the abdominal wall.

The principles involved have all been previously covered, as the essayist states. While the essayist recommends omphalectomy in small and medium sized herniæ, he rejects in large ones, on the ground that there is here "a general scarcity of useful tissues," and "it is not advisable to remove anything except skin, adipose tissue and minor triangular pieces from the upper and lower portions of the hernial ring so as to make it perpendicularly elliptical." The tissue between the recti muscles is then turned in by successive rows of continuous catgut sutures, after Maydl's method, until the margins of the recti are brought together.

This, I think, is an error. The object of omphalectomy is to remove the ring, the edges of which, as the essayist states, are "hard, sharp and calloused," and will not readily nor firmly unite if approximated.

If this be true of small or medium-sized umbilical herniæ it certainly is of large ones. The part turned in cannot contribute any to the strength of the union, for such a union can be no stronger than the thickness of the fascia turned in, and, in fact, when subjected to lateral traction such a union has a tendency to yield more readily than a direct, edge-to-edge union. So far as preserving intra-abdominal space, the tissue would better be removed than invaginated.

It is, however, the particular method of applying the long silver wire tension suture, I believe, which the essayist claims as the improvement in the technique.

The use of wire tension sutures is, of course, quite old, but it will be remembered the essayist passes his suture posterior to the rectus muscle and extends laterally with it beyond the lateral border of the muscle before piercing the fascia and coming to the surface.

We have, posterior to the wire in the upper portion of the abdominal wall, nothing but the posterior layer of the rectus sheath with the thin transversalis fascia and peritonæum, while below Douglas' fold there is only the thin transversalis fascia and peritonæum, as all of the rectus sheath in this location passes anterior to the muscle, consequently the suture practically passes through the thickness of the abdominal wall at one of its thinnest points, namely, the linea semilunaris.

It is easily seen that the amount of traction or tension which can be applied to a button suture of the character described by the essayist is represented entirely, other things being equal, by the thickness of the wall through which it passes, and is not dependent upon the distance of the suture from the edge of the wound.

Hence, when such a suture is placed distant from the edge of the wound equal to the thickness of the wall through which it is to pass it will sustain the maximum degree of tension, and any increase of the distance beyond this point does not increase the amount of tension which it will withstand. The statement of the essayist that the tension sutures, as heretofore passed through the median portion of the rectus muscle, cut off the circulation to that portion of the

muscle, thus leading to pressure atrophy, is unsupported by the presentation of any facts, without which it cannot be accepted. Muscular tissue is rich in blood vessels which are not of the so-called terminal variety but run longitudinally; that is, parallel with the muscle fibers and anastomose very freely.

On the other hand, the tension suture, as placed, by the essayist, passes through the abdominal wall at a point entirely aponeurotic in structure.

The aponeurotic layers of the abdominal wall are of the utmost importance in the prevention of hernial protrusions.

They never form coverings of these herniæ, but the hernial contents always escapes through openings, in them, either artificial or spontaneous. The passing of a number of large double wire sutures through this aponeurotic space, particularly if they should cut any, is very liable to produce small openings, loci minoris resistentiæ, favorable to the development of future herniæ.

The force of this statement is clearly proven by the essayist's own case, No. 1. Upon examining her sometime after the operation, he says: "There is no protrusion anywhere in the line of the former incision, but a small one the size of a hickory nut at the place where the left lower (infected) gauze button cut into the tissues."

In view of these facts, the long wire tension suture passed through the linea semilunaris, as described by the essayist, cannot be looked upon with favor.

The third part of the operation, the uniting of the individual layers of the abdominal wall with buried sutures, has a preponderance of theoretical and practical evidence in its favor, notwithstanding the critical objections of Kossmann, A. Martin, Dührssen, and others.

These buried sutures should not be the ordinary suture *en étages*, but should be applied to the individual layers of fascia so as to bring their edges in accurate apposition. Nor should the catgut used be too large. We are able to use quite small catgut since the excellent method of preparation devised by Hofmeister has provided us with sterile gut which possesses great tensile strength, combined with durability. The objection to too large catgut is the free leucocytosis which at times occurs about perfectly sterile gut, as shown by Poppert, and the gelatinous infiltration of the suture place described by Schatz, both of which conditions tend to allay the production of mature connective tissue and weaken the line of union. Hence the

smallest gut consistent with firm, accurate approximation of the layers should be used.

Direct traction on these sutures should be relieved by properly-applied transfixion tension sutures, with superficial cutaneous sutures. Where there is any difficulty in drawing the wound together the tension sutures should be placed first as advised some time ago by Zweifel.

Finally, I must again dissent from the advice of the essayist "to have the skin open to granulate when the layer of fat is very thick, etc." Cicatrices formed by granulation are notoriously weak, and withstand tension badly. Surgeons have not yet forgotten the dismal failure of McBurney's operation for inguinal hernia where the wound was left open to granulate. Such a wound left open to granulate is almost certain to become infected with pyogenic microbes, in spite of careful dressings.

This not only materially prolongs the period of recovery, as in the essayist's third case reported, where the recovery was protracted three or four months, but, as already stated, is the most influential factor in the production of subsequent ventral herniæ. Referring again to Abel's report of Zweifel's cases, 529 laparotomies, followed for from $2\frac{1}{2}$ to 9 years after operation, where he shows the deleterious influence of suppuration in the production of ventral herniæ. In cases that suppurated two weeks, 40 per cent. had herniæ; three weeks, 54 per cent.; four weeks, 65 per cent.; over four weeks, 80 per cent.

Such statistics show very eloquently if there is one place above all others where rapid primary union with the production of the least possible amount of cicatricial tissue is desirable it is in incisions through the abdominal wall.

NOTE.—The essayist stated subsequent to the discussion that, as the paper was read some time after it was written, he would like to make a correction in regard to the time occupied by case No. 3 in recovering. This, it appears from the manuscript, was about four months, but the essayist states this is too long.

NOTE No. 2.—I would modify my statement of the length of time to suit his correction.

Dr. WELLER VAN HOOK: The tension sutures in abdominal hernias should be placed in the sheath of the rectus muscle but not too far away from the line of union. I do not see why it is necessary

to go back so far as Dr. Goldspohn suggests. If we apply tension sutures outside of the rectus muscle we leave out entirely the sheaths of those muscles, thereby diminishing the amount of material that should be used to enclose the abdominal contents. There is a valid objection to the use of continuous sutures for bringing together the recti muscles, in that if any part of the suture line breaks through, or if suppuration occurs at any point, the whole line becomes loose and the entire operation is liable to fail.

I agree with Dr. Harris in regard to the open wound treatment. I am confident it is a mistake, because no one can treat an open wound of this kind long without suppuration, and the occurrence of suppuration will defeat the object of the operation, causing the deep sutures to loosen and diminishing the chances for permanent closure of the wound by means of mature connective tissue.

I cannot think that the position of Dr. Goldspohn concerning Gersuny's operation is well taken. Gersuny unites the recti muscles with catgut sutures, but his object in doing so is not so much to strengthen the abdominal wall as to hold the muscular fibers in place, and to prevent them from getting between structures joined at other points.

The principles that we have to guide us nowadays in the treatment of these herniæ are well established and very plain—namely, avoid suppuration and unite the different layers separately. When we unite a wound we do so with a knowledge that the different tissues of the body have different regenerative powers. We all recognize this when we suture nerves, muscles, periosteum, subcutaneous tissue and skin. We are liable to forget it when we suture the abdominal wall. The contest or rivalry between the different tissues in wound healing is remarkable. Nerves require many weeks to heal; tendons not quite so long, and the looser connective tissues the least amount of time. If we wish tissues to regenerate with great activity, to unite to one another, we must be careful not to interpose tissues of different regenerative power. Otherwise the various tissues will be found after healing has taken place to have been fused together into an inextricable mass, whose functions can be but imperfectly performed.

Dr. GOLDSPOHN (closing the discussion): In regard to the causes of hernia, I will read an extract from my paper on this point. (Here the speaker read.) These herniæ occur in corpulent women

who have borne children, but it is known, and a number of authorities agree in this respect, that corpulent women, who are nulliparæ, do not have these herniæ any more frequently than do males. There is only one conclusion, namely, that pregnancy must be the exciting cause, whereas a fat build is the predisposing cause.

The objections which Dr. Harris presents are wholly theoretical; and, on closer inspection, are not well founded even in theory. If he were to operate on a few of these cases he would have an experience which would coincide with that mentioned by Dr. Watkins, that in trying to coapt the fasciæ alone every single stitch inserted in any single structure in trying to unite any one layer would tear out. The only possible way without tension sutures, is to employ *en masse* sutures, taking everything at once. Suturing in layers is an impossibility in these cases with diastases of four to five inches, unless very substantial tension sutures have been placed previously. The remark was made that wire sutures, as tension sutures, are old. And, as ordinary interrupted sutures, this is true; but not otherwise in this connection. Wire has been used for this purpose by Boldt, Marion Sims, Emmet and A. P. Dudley. All of these gentlemen placed it as ordinary interrupted sutures, with slight variations. Emmet and Dudley placed these sutures not through the entire thickness of the abdominal wall, but simply through the fasciæ, muscle and peritonæum, and then tightened the ends of each through a silver canula, which projected through the fat and skin. The latter structures were closed separately. But there has been no tension suture used in this part of the body, in the manner nor for the purpose of the one that I have described in this paper. Nor has the object of transferring the tension to the regions beyond the recti muscles been aimed at by any one.

As for proof that wire, under such severe tension for two, three or more weeks, will cut muscle, etc.: it is too frequently seen to require further proof, that wire under these circumstances, will, by pressure atrophy, even cut bone. Because the sutures cut out, Thos. H. Manley had an extrusion of eight inches of intestine during the after-treatment. And, for the same reason Langsdorf applied adhesive plaster for six months, then a bandage two months, and then there was a full recurrence of the protrusion.

More such plain facts any one can see who goes through the literature of the subject. Good men have not attempted to cure

these cases until recent years, because of the difficulty in closing the wound and because of the very general recurrences.

The linea semilunaris, the doctor says, is the thinnest portion of the abdominal wall. He means probably outside of the linea alba. But this is a forced objection which does not stand against these tension sutures because, as he can see, they are not passed from within the abdomen through the linea semilunaris, but through the anterior blade of the rectus sheath "at the linea semilunaris," *i. e.*, near it, but not through it.

Dr. Harris criticises me for making auxiliary use of the aponeurotic web of linea alba in these cases of wide diastasis, after the manner of Maydl instead of cutting it all out *à la Condamin*. The objection of a callous edge of the ring, etc., is overcome by paring such edges and by abrading the entire outer surface of the web. The cut edges and roughened surfaces are then united by successive tiers of catgut sutures and turned into the abdomen, until the edges of the sheaths of the recti muscles come into approximation with the assistance of the tension wires. And now follows the complete Condamin procedure, which Dr. Harris would have alone, *viz.*: opening the sheaths of the recti, suturing the edges of the posterior blades separately as a second layer behind the wires, then suturing the edges of the anterior blades and the muscles, as the most important act of all, in front of the wires, and lastly closing the fat and skin wound. This accomplishes all that can possibly be done by complete omphalectomy, and obtains great assistance from a judicious use of the omphalic web. Buried sutures should be applied to the fascia chiefly. That I agree with. Unite the individual layers and particularly the fascia in each separately, but coapt the muscle also. In a number of cases of ordinary sections I have omitted the muscles entirely; extravasation of blood occurred between the ununited muscles, and in many of these cases late abscesses developed, coming after ten days. So the results in dozens of all kinds of abdominal sections, with me, are entirely favorable to uniting the edges of the individual layers of fascia, but by every alternate stitch bringing some of the muscle together also, which we can do just as well as not.

I do not wish to convey the idea that I regard the open wound treatment as ideal by any means; and I sewed up the wounds completely in every one of the cases that I have reported. But fat ne-

crosis and consequent suppuration necessitated the removal of most of the skin sutures, in the last case, after two weeks. And it is only after conferring with operators of greater experience than mine, that I have decided to adopt this method, or a modification of it, in exceptional cases of great thickness of fat and great tension. The modification would consist of placing interrupted silkworm gut sutures, but bringing them together loosely only over a gauze drain for two or three days; then removing the gauze packing from the wound and bringing its edges together snugly by tying the sutures. As to the cicatrix that results from open wound treatment: we know that a cicatrix will hold *something*, while the fat and skin which it displaces would hold practically *nothing*. The remark was made that in the last one of my cases the treatment (of the open wound) was protracted three or four months. That is not so. That patient, and that one only, was dressed during ten weeks. But I am myself partly to blame for the doctor's erroneous inference, which he draws from the expression "it is now nearly closed." But this expression, as well as the entire paper, was written about two months before it was presented to this society on May 21 of this year, when this passage should have been corrected.

The manner of closing the wound, as advocated by Dr. Harris, has been known since we have used any tension sutures at all. Men would not have devised plastic efforts of splitting the recti sheaths and drawing the muscles out of their sheaths, if the old methods had been at all satisfactory. Dr. Van Hook thinks it is unnecessary to place the tension sutures so far away; that we might better use the recti also in the transverse stretching process. But I still hold that we can do as much of this as is desirable, by means of the apposition sutures that close the wound, and that it is important to transfer the severest tension to those parts of the abdominal walls where there is no wound to heal, where no harm is easily done by tension, and those are the regions of the oblique muscles laterally.

The doctor thinks the general principles pertaining to the closure of ventral incisions are settled. I think so also. But very much more agitation of the subject will be needed before they are appreciated and generally adopted by merely a majority of extension operators. The objection to the continuous suture that the doctor mentions I avoid by sewing with a double thread of a smaller size. The ends of these two threads are tied at the beginning and at the

close, to each other like two ends of a single thread, after one of them has been passed around the double thread. Thus all big knots are avoided, which invite suppuration easily. Rather less catgut substance is employed and buried than in interrupted sutures with their many knots, and two threads will not often disintegrate and yield together at the same spot.

Digital Examination of the Uterine Cavity for Diagnostic Purposes.

BY HENRY BANGA, M.D.

(See page 540.)

DISCUSSION.

Dr. C. S. BACON: The paper has been a very interesting description of the technique of digital examination and a statement of the advantages of the procedure. Before commenting upon these branches of the subject, I wish to allude to a point that has not been brought out by the essayist, namely, the dangers of the procedure, and this means, of course, danger from infection. There is not only some danger in the preliminary operation of dilating the cervix by means of a tent, especially as frequently happens in these cases when the uterine cavity is infected, but also from infection by the finger itself. I think that we are now much more aware of the great danger of infection from the finger, and particularly infection from the finger-nail, than we were two or three years ago. We know how difficult it is to disinfect the hands. We are aware of the fact that probably in very few cases of laparotomy are the hands entirely aseptic. The reason that serious results do not always follow from the infected hand is due to the fact that the walls of the abdomen and the peritonæum are able to care for a certain amount of infected material and prevent it from doing harm. In those cases where there is much wound surface there is danger of infection, especially in operations for the removal of myomas from the uterus. In those cases where there must be a lot of manipulation by the hand, and where infection is so serious, when once it occurs, operation must frequently be abandoned. At least such operations have fallen often

into disrepute on account of the infection which resulted. In order to overcome that it has been necessary to protect the hand, even after the most careful disinfection, by means of gauze or gloves, as is now adopted by some surgeons in all their abdominal operations. I refer to the method of Mikulicz in Breslau, and many others who, on account of possible infection, have adopted the practice of wearing sterilized gloves in all of their abdominal operations. The danger of infection from the hand, or the impossibility of thoroughly disinfecting the hand, is a fact that must be recognized, and I believe very few are willing to state that even after fifteen or twenty minutes' disinfection, the fingers are thoroughly aseptic, that there are no germs about the finger-nails. In ordinary operations no bad results occur, but in the palpation of the interior of the uterus, any germs that exist about the nails are carried to a very easily infected locality. This danger should be emphasized and recognized as a serious objection to digital examination.

In regard to the comparative advantages of palpation and curetting, the essayist gives a forcible instance of leaving the portion of an egg after curetting. Such instances, I presume, have occurred to a great many. On the other hand, there are instances where the finger has also failed to detect the decidua in the uterus. Where the decidua begins to separate at the fundus, one can often pass the finger into the cervix, feel a smooth cervix, and would believe the uterus is empty, but if the finger is carefully carried around all over the uterine surface, generally some point can be found where it will get between the decidua and wall of the uterus, so that a mistake made in palpation would be due to a faulty technique. So also the mistake in leaving part of an egg or decidua in the uterus after the use of the curette would be due to a faulty technique in the use of the curette. It must be used more thoroughly than in the cases mentioned.

With regard to the possibility of the microscope leaving us in the lurch, it brings up a question which has been disputed so much, namely, the real value of the microscope in gynecological diagnosis. The difficulty is generally this, that the examiner looks only at a few pieces, instead of examining all the scrapings from the uterus. If a thorough curettement is done and the scrapings all examined no mistake can be made, but nearly every one knows that such a procedure is very rarely adopted. It takes up a good deal

of time, and failure in diagnosis is largely due to improper use of the microscope.

I will speak of one point in regard to the technique. I believe it is of value, before introducing a tent, to introduce a dilator, either the branching dilator or the Hegar dilator, of sufficient size so that a tent of medium size can be introduced. A tent of perhaps seven to eight millimeters can be introduced, and then that will dilate sufficiently to enable us to make an examination by the use of one tent instead of running the extra risk of introducing two or three tents.

Dr. BANGA (closing the discussion): Dr. Bacon said I should have laid more stress upon the danger of infection in dilatation. I did not do it because I took it for granted that in our society here every one considered as absolutely necessary, and practiced conscientiously asepsis in every gynæcological operation, even the most simple one.

Official Transactions.

T. J. WATKINS, *Editor of Society.*

TRANSACTIONS OF THE NEW YORK ACADEMY OF
MEDICINE (SECTION ON OBSTETRICS AND
GYNÆCOLOGY).

Stated Meeting, October 7, 1897.

The President, E. G. JANEWAY, M.D., in the Chair.

The Medical Treatment of Puerperal Infection.

BY CHARLES J. JEWETT, M.D., Brooklyn.

(See page 521.)

The Surgical Treatment of the Puerperal Septic Diseases.

BY EGBERT H. GRANDIN, M.D., New York.

(See page 532.)

DISCUSSION.

Dr. CHARLES P. NOBLE, of Philadelphia: The ground has been so thoroughly covered by the two papers that I shall limit my remarks to one or two points. The first is that of serum treatment, which was brought up by Dr. Jewett. In Philadelphia the results of this treatment have not been very satisfactory. Twelve cases, with six deaths and six recoveries, have been reported there, and the conclusion has been reached that the serum is harmful. It is but fair to admit, however, that the cases in which it was employed were more than ordinarily severe; so perhaps it has more value than appears from this showing. Personally, I would not feel inclined to use the serum unless a bacteriological examination demonstrated the presence of streptococci in the system, which is not proven by their being found in the lochia.

I especially want to emphasize the importance of making an early diagnosis, and I agree most fully with Dr. Grandin that for this purpose an examination of the uterine canal should be made under

anæsthesia. I would also investigate the condition of the vagina. Infection through abrasions of the vagina and lacerations of the perinæum is of common occurrence. We have all seen such cases. If these are discovered early, they should be touched with carbolic acid or nitrate of silver and the septic process thus cut short. In cases seen late such an examination is of value in showing the source of infection and in ascertaining whether any pelvic exudate exists.

Another important point is that touched upon by Dr. Grandin when he said that when patients recover from puerperal infection their pelvic organs are more intact than after an infection which is not puerperal. This conclusion has been forced upon me by seeing cases which have recovered with sound organs, and therefore we should hesitate before doing extirpating operations in these cases. A marked case of this kind I saw recently, some weeks after labor. The pelvis was filled with an exudate and all the abdominal viscera were pushed up as high as the navel. In accordance with my teaching, I attempted to make an abdominal section, but was obliged to desist because the patient took the anæsthetic so badly. Later I again tried to open the abdomen, using chloroform this time, but with no success and I finally made a vaginal incision and drained without narcosis. The woman made a good recovery, and has since had another baby, also a hernia, much to my surprise.

In those cases in which suppuration does not take place, medical treatment will result in cure. Where it does occur, incision and drainage, when employed early, will be followed by recovery. Great conservatism, therefore, should be practiced in these cases. Recovery followed in six cases in which I did a drainage operation.

In regard to irrigation, I think the length of time intra-uterine injections are employed should be limited. There are no advantages to be gained by prolonged irrigation. If used longer than one or two days, it is more apt to do harm than good. I have employed intravenous injection of salt solution with excellent effect, and my experience in this direction leads me to believe that it is of great service in drawing off ptomaines and in keeping up the weak heart.

Dr. PAUL F. MUNDÉ: I feel that I can add nothing to what has already been said. I would like to express my gratification at the conservative position taken by both of the authors in regard to sur-

gical interference. Some years ago, I saw quite a number of cases of puerperal infection in consultation, and I remember how I always felt as if my hands were tied—that there was nothing one could do. Sometimes there would be nothing in the uterus, nothing in the pelvis, and yet the temperature would be 104° or 105° for days, with a pulse to correspond. It has always been my opinion that if one could keep such a patient alive until the disease has run its course, she would recover, and my treatment has been directed toward keeping up the strength by stimulation and reducing the temperature. Within the past year, however, a ray of hope has come to us in the shape of the antitoxin treatment. I have employed this treatment with the most satisfactory results, and under its use two patients recovered whom I thought would die. In a storm, when the ship is going to pieces, we grasp at anything; this is why we welcome the antitoxin treatment. We must still experiment with it, however.

In regard to surgical treatment of puerperal infection, I am glad to hear that the curette is not to be employed except when there is something in the uterus to be removed. Pelvic abscess and collections of pus, the results of an endometritis, should be evacuated at every point. I do not believe that, as a rule, removal of the infectious puerperal uterus is a good operation. The woman will probably die anyway if the condition is bad enough to make hysterectomy necessary, although I believe there are some cases on record in which uteri filled with septic fluid have been successfully removed. Septic purulent peritonitis, whether puerperal or not, should be incised and drained. The results are not very good, but once in a while a case gets well who otherwise would have died. I wish some one would give us a medicinal agent which will cure septic peritonitis. We would not then disagree so much about its surgical treatment.

Dr. HENRY C. COE: The history of the treatment of puerperal endometritis is very interesting and very like that of hysterectomy—at first, it was very conservative; then very heroic, and again very conservative, but at no time reaching a middle ground. I have a very vivid recollection of washing out uteri every two or three hours day and night some years ago, when I was associated with a well-known obstetrician, and as I look back, I am impressed with the remarkable power of resistance the patients must have had to be able

to stand the nervous shock and physical strain of having the uterus washed out so often. After that, we went to curetting and curetted all cases, and now we are irrigating again.

I cannot agree with Dr. Grandin that it is easy to make the differential diagnosis in puerperal infection, and I think it is impossible to do so without anæsthetizing the patient and exploring the uterus with the finger. It is not always possible to do this, for example, when the uterus is so large that it reaches the umbilicus. There is one point which Dr. Grandin did not mention, viz., that immediately after delivery the uterus is in a state of anteflexion which prevents drainage, and sometimes the mere opening of the uterine canal will be all the treatment necessary. Imperfect drainage is the cause of much septic infection. Dr. Lusk taught us we should not disturb a sloughing uterus. I have seen good results follow the use of peroxide of hydrogen in a desperate case, and do not see why it should not have the same application in the uterine cavity as in appendicular and other abscesses. The intravenous use of salines has been of value in my hands, the patients making a good recovery. From half a pint to a pint was injected. I have used oxygen inhalations with so much benefit that it seems to have an almost specific effect. A method of treatment which is not generally known is that of packing the uterus with gauze kept saturated with alcohol. I have never met a suitable case in which to do hysterectomy.

Dr. C. A. VON RAMDOHR: As the ground seems to have been pretty well covered, I will add only a few words to emphasize certain points. The right treatment of puerperal sepsis is prevention. It is possible to prevent it. Auto-intoxication does not exist. When infection takes place, the obstetrician is the infector. The differential diagnosis must be made between sapremia and septicemia. Never use bichloride. When applied to the uterine cavity under certain conditions, it will give rise to acute nephritis. Whenever sapremia is present, as shown by fever, leucorrhœa, retained membrane, the latter should be removed with the curette and *one* intra-uterine douche given. Whenever there is a pus collection in the pelvis, it should be treated like any other abscess. If such a collection exists and the uterus proves an obstacle to drainage, the organ should be removed, as it will always be a nidus for further disorders, and not a useful organ. Give alcohol in large doses—one

bottle of brandy in twenty-four hours is not too much. Serum-therapy must be welcomed if it gives us any hope. The use of the coal-tar preparations is a step backward, as they weaken the muscle of the heart. Where systemic infection has taken place, local treatment is worse than useless.

Dr. H. N. VINEBERG: I feel very diffident about giving my experience. I hoped I would hear something to-night which would tell me what to do in cases where the patient has done well for a few days, and suddenly has a chill followed by a rise of temperature and abdominal pain. Upon examination the vagina and cervix appear intact, there is no discharge from the uterus, and the only thing which seems to be out of the way is the large size of the uterus. I have seen at least half a dozen such cases and all proved to be the result of decomposition of portions of placental tissue remaining in the uterus and undergoing absorption. The most marked case of the kind which I have ever seen was that of a young woman, eighteen years of age, married twelve months, who had recently been delivered. She was attended by a physician who told me that labor was easy and normal, that he had examined the placenta, which was all right. The baby was put to the breast early and the patient did well until the sixth day, when she had a severe chill followed by rise of temperature; a second chill occurred on the following day, and abdominal pain set in. I made a diagnosis of septic endometritis and advised curettage, which was done and followed by repeated irrigations. A large piece of the placenta which had become organized was removed from the left horn of the uterus. It was very foetid and the entire cavity of the uterus was covered with slimy mucus. There had been no discharge from the uterus. The patient did not do well, however, and some months later she was sent to the hospital, where I did a hysterectomy. She made a good recovery. It seems to me that if constant irrigation had been employed in this case in the beginning, the portion of placenta in the upper part of the uterus would have been washed away. Since then I have employed this method in two cases, both of which recovered.

Dr. ROBERT A. MURRAY: As the hour is quite late I will not speak of anything which has already been mentioned, but there are three points to which I wish to refer. In the first place, I think that many times we have sepsis because we have forgotten the old rule of giving ergot in the third stage of labor to ensure good contraction

of the uterus. In a large hospital and outdoor obstetric practice, I have not had a single case of sepsis, and yet many of them were tenement-house cases, delivered under the most unfavorable conditions. No antiseptics were used, except a little carbolic acid, half an ounce to a twelve-ounce bottle, and no emollient was used upon the hands. I depended entirely upon cleanliness, and in many of the cases we had to bathe the maternal parts. Just as labor was completed a full dose of ergot was given to contract the uterus and keep it contracted, and at every visit made the first thing which was done was to put the hand on the abdomen to see if the uterus was properly contracted. If there was any bleeding, another dose of ergot was given. If the uterus is well contracted, blood-clots will not lodge there, decompose, and cause sepsis. If there was a slight rise of temperature, the finger was introduced and passed over the whole surface of the uterine cavity, and I have never seen a septic uterus into which I could not pass my finger. In probably a thousand cases at the hospital, we never had any sepsis, and we did not have the slightest rise of temperature until the visiting physician himself began to make examinations. The curette should be used whenever anything remains in the uterus. If there is any foul odor on the examining finger, it is because something is sloughing there, and that uterus should be curetted and treated like any abscess cavity. Some agent, such as alcohol, carbolic acid, or tincture of iodine, which will coagulate the albumen and stop up the mouths of the venous and lymphatic channels, should then be applied to the entire uterine cavity to prevent absorption of septic matter.

I will make only one remark in regard to the general treatment and that refers to how to reduce the temperature. I was glad to hear Dr. Coe mention the use of oxygen, but one agent has not yet been referred to—*veratrum viride*, as Dr. Fordyce Barker used it, in small doses. If given in large doses it affects the stomach. Alcohol should also be given.

In regard to septic general peritonitis, I have yet to see a case at autopsy which did not make me feel that nothing can be done surgically for this condition. When a woman's organs are riddled with abscesses and the pelvic cavity full of pus, she is in such a terrible state that the shock of an operation will kill her. If the case is seen early, while the peritonitis is localized, conservative treatment such as drainage may be employed.

Dr. J. RIDDLE GOFFE: The points have been so strongly presented that I feel anything I can say will be but repetition. The treatment which I employ in these cases has been outlined by Dr. Grandin and differs only in one particular, *i. e.*, I always explore the cavity of the uterus with the curette rather than with the finger. My reason for this is not because I fear sepsis from my own hand, but because I have seen infection so often conveyed in this manner that I prefer for diagnostic purposes to use the curette, which can be made *absolutely* aseptic by boiling. Of course, cleanliness on the part of the *accoucheur* himself is all important, but it is difficult to render the hand aseptic. During the last four years I have kept records of the cases of puerperal sepsis which I have seen in consultation, and in every one of them the hand had been introduced into the uterus. Whether or not the infection was conveyed in this way, of course it is impossible to say, but I think the probabilities are that it was.

Dr. SIMON MARX: Dr. Grandin has emphasized the fact that we should be careful to curette only down to the granulation layer in putrid endometritis, because these granulations form Nature's barrier against the entrance of septic germs. Now, Dr. Grandin's touch may tell him when he reaches this layer, but mine would not tell me. Personally, I prefer to get down to good sound bottom when I curette.

In regard to the antistreptococcic serum treatment, it seems strange that it is not successful in puerperal cases when such good results are obtained with it in surgical sepsis. I believe it is because the puerperal condition emphasizes the poison, or else it is because the infection may be a mixed one. My experience with the serum has been most unsatisfactory. In one case in which the treatment was begun early and large doses given, the patient was dead within six hours after the first injection. Bacteriological examination showed that the infection was a mixed one; the symptoms were those of general septicemia. I think the serum hastened death in this case. In a second case, the patient died within five hours after the treatment was begun, although she was not in a very bad condition at the time the serum was given. In a third case the serum was injected thirty-six hours after the first appearance of septic symptoms, and four days later she developed acute endocarditis and embolism of the lung and died suddenly. A fourth case, in which

the serum was used, died at the end of a week. I have come to the conclusion that the cases in which the antistreptococcic serum has been successfully used in France and Germany were not cases of pure sepsis but were cases of sapremia. It is in these cases that recovery follows hysterectomy, and the chances are that the patients would have recovered without the extirpation. The clinical history of septicemia and of sapremia differs in many ways. In sapremia there is a rapid pulse with a low temperature, while in septicemia it is just the other way.

Dr. J. M. ABBOTT: There is one point to which I desire to call attention, and that is the occurrence of malarial fever during the puerperium simulating septic infection. We have had several such cases in my service at the Infant Asylum, and in all of them the plasmodium malarie was found in the blood. The temperature fell immediately under large doses of quinine. It is well to remember that malaria may and does occur in the puerperal woman, and to give quinine when there is a rise of temperature instead of employing the antitoxin treatment which we acknowledge may be harmful.

Dr. W. EVELYN PORTER: I am in favor of intra-uterine irrigation, and am surprised that but little has been said here to-night as to how it is done. If improperly performed it causes pain and discomfort and may cause much harm. The irrigating fluid should be introduced into the uterus through a flexible rubber tube which is inserted well up to the fundus. Frequent irrigation is followed by good results. In cases where a piece of the placenta is retained, this is best removed with properly constructed forceps, instead of with the curette, and the uterine cavity irrigated.

Dr. A. MONAE LESSER: The occurrence of malaria during the puerperium is not uncommon. I have seen several cases in which fever developed a few days after labor and sepsis was suspected. Upon examining the blood the plasmodium malarie was found, and, accordingly, quinine was administered in large doses, with the result that the temperature became normal.

Dr. JEWETT: Dr. Grandin has divided puerperal infection into sapremia and septicemia. I think I would make three divisions, viz., sapremia, mildly septic, and highly septic. There is not so much difference between sapremia and sepsis, and many cases of the former usually prove to be septic. The most important part of the discussion is that which refers to the treatment of the uterine

cavity. The curette is permissible if there is any indication for it. In purely septic cases it is contra-indicated.

I am glad to learn from Dr. Noble the benefits to be derived from the intravenous use of salt solution in these cases.

As to the occurrence of malaria during the puerperium, it is frequently a complication of sepsis.

Dr. GRANDIN: I wish to take exception to the statement made here to-night that it is better to examine the uterine cavity with the curette than with the finger, because the former is cleaner. If a man's fingers are not clean enough to be inserted into the uterus, then that man has no place at the obstetric bedside. Why insert an instrument into a cavity to explore it when I can do it very much better with my hand, the instrument which the Creator has given me? I do not think the case which Dr. Vineberg reported would have required such a radical operation if he had explored the uterine cavity with his fingers. The hand is not used enough in obstetrics, and yet it is better than any instrument.

ABSTRACTS.

THE STATUS OF GYNÆCOLOGY ABROAD.

FRANCE.

Dermoid Cyst of the Ovary causing Dystocia.

Dr. FIEUX (*Archives Cliniques de Bordeaux*, May, 1897) reports the following case: The patient, aged twenty-two, was admitted to the hospital. Had had two children previously. The first, after a protracted labor, had died shortly after birth. The second child was alive and healthy. The patient when admitted to the hospital had been in labor for nine and a half hours. Her pregnancy had been uneventful except that during the last month she had experienced an unusual sensation of weight in the true pelvis. Upon admission to the hospital the patient was suffering intensely. The pains were very strong and prolonged. The uterus reached to 36 centimeters above the symphysis. The head was on a level with the superior strait and under pressure. The position was L. O. A. The heart sounds were clearly heard at the upper third of the right ilio-umbilical region. They were weak but regular. Filling the vagina and appearing at the vulva during the pains was a hard tumor about the size of a grape fruit, somewhat elongated in the vertical direction and extending beyond the posterior vaginal wall.

The cervical dilatation was complete and the membranes had ruptured. The head was in the superior strait.

By rectum the tumor was distinctly felt pressing upon the bowel. The mucous membrane of vagina and rectum was freely movable over the tumor. The tumor was located between the vagina and the rectum. It was decided to evacuate this, and accordingly a large trocar was introduced attached to an aspirator. By this means a thick, clotted fluid of a greenish-white color—the usual contents of a dermoid cyst—was evacuated. The opening in the cyst was then enlarged and the contents emptied.

The forceps were then applied to the head and delivery accomplished without difficulty. The expulsion of the placenta was easy. It was found that a laceration had occurred in the septum, between

the vagina and rectum to the extent of two centimeters. This was repaired immediately.

The puerperal period was passed uneventfully. The tumor could be felt about the size of a small orange.

Some months later the dermoid cyst was removed by Prof. Lannelongue.

Uræmia resulting from Uterine Fibroma.

Dr. M. OZENNE (*Semaine Gynécologique*, June 15, 1897) records the following interesting case:

Attention has been called for some time to a number of diseases of the urinary organs caused by the presence of fibromata in the uterus. Among these uræmia, when it appears suddenly, may be considered as extremely dangerous. Examples of this are, we believe, not very numerous, and for that reason an exceptional case like the following may be worthy of our attention.

During the year 1890 Mrs. H., whose menopause had occurred several years previously without abnormal symptoms, came to consult me in regard to some prolapsing hæmorrhoids. This was the first appearance of the hæmorrhoids, and was in connection with a rather large fibrous body (unknown to the patient), so far only shown by the increased size of the abdomen.

After the hæmorrhoidal growths disappeared several months elapsed without any appreciable failure of health, when, in April, 1891, the patient had an attack of intestinal obstruction, following one of her habitual periods of constipation. After employing a number of remedies ineffectually, she was finally relieved by several electrical enemata. The recovery was fairly rapid, but, as a safeguard for the future, I advised the removal of the uterine tumor, as it was growing and by its pressure on the intestines prevented the regular evacuation of the bowels.

For four years nothing of a serious nature occurred, and Mrs. H. only had to keep her bed for short periods on account of hæmorrhoidal crises and attacks of tempero-occipital neuralgia; the first treated by rest and hot, moist compresses, and the second by antipyrine.

It is true that she felt, from time to time, some abdominal and lumbar pains, on which occasions examination of the urine revealed no important changes. She also experienced occasionally some gas-

tric trouble, provoked by too free use of alcoholic liquors. As her business fully occupied her time, she was unable to take proper care of her health, and was often forced to make trips to England.

After one of these trips, during which she felt weak and sometimes dizzy, on November 15, 1896, she was attacked with violent bi-temporal cephalagia. For five days she used antipyrine, and, on the evening of the fifth, although the pain was less violent, she sent for me. Her face was a little congested, pulse somewhat fuller than normal, temperature normal, and auscultation of heart and lungs revealed no trouble in those organs. The abdomen did not give any particular evidence as to the size of the fibroma, and the thickness of the abdominal wall and the intestinal tympanism prevented a profound palpation which I tried to make, especially in the left flank, where the patient complained of slight pains. Bowels had moved in the morning, and during the day several micturitions, although not abundant, had taken place.

During the night Mrs. H. was suddenly attacked with coma—uræmic coma, as was shown by the examination of several grams of urine passed next morning. Coma was complete—members in resolution, intellect entirely obscured, face pale, eyelids closed, pupils somewhat dilated and but slowly sensible to light, respiration accelerated and stertorous. Patient died thirty-six hours later, without having recovered consciousness, although I had tried by means of leeches and the lancet to obtain a flow of blood.

Remarks.—On account of the relation of the uterus to the bladder and ureters, we can easily understand that certain lesions of the uterus may have injurious effects on the functions of the urinary organs. Therefore, under the heading, "Complications of Fibrous Bodies of the Uterus," we find all the authors giving a great deal of space to symptoms (?) resulting from pressure upon the ureters or bladder.

Whether it is a question of cancer or of fibroma of the uterus, these conditions are very similar to each other, and since Murphy has directed the attention of pathologists to them we have seen a certain number of physicians—Hanot, Jude Hue, Milliot, Pourrat, Fourstée, Lee and Skene, Salin and Wallis—demonstrate in various publications the special gravity which in such cases fibromata of the uterus may assume.

In a paper published in the *Annals de Gynécologie* in 1884, Pozzi

made a special study of these complications, which he considers as frequent and of very great importance among operatory indications.

Several years later appeared in the same scientific review a report of Porak upon an observation of Jouin regarding a case of albuminuria and dyspnœa, doubtless of uræmic nature, which disappeared after an operation of uterine polypus.

As regards observations in cases of uræmic coma, they are somewhat rare, and, as far as we have been able to affirm from rapid research, have not been made on patients attacked with fibromata of the uterus.

In an excellent article of the *Dictionnaire encyclopédique des sciences médicales* Merklen sums up the authors who pointed out this sudden form. Our colleague writes: "Sometimes the coma is very sudden and occurs as first and only manifestation of uræmia. But more frequently it follows some premonitory symptoms which passed unperceived or were attributed to another cause."

The foregoing goes to prove my position, as the violent headaches from which our patient suffered during several days previous to the coma were only a manifestation of uræmic intoxication. Nevertheless, it was difficult for us to suspect such a condition, as the day preceding this attack, the day we were summoned, the headache was somewhat relieved and its reappearance was not accompanied by either emesis or disturbance of vision. The examination of urine, made some months previously, had been negative, and as the patient had often suffered with neuralgic attacks of several days' duration, it is not remarkable that we did not consider her a uræmic person, in whom the slight pain felt in the left flank, indicated probably the existence of a hydronephrosis.

These observations will prove the importance of making frequent examinations of the urine of every woman suffering from fibromata of the uterus. If the examination shows that it contains albumin, it indicates the necessity for the removal of the tumor.

If the intoxication is established, under whatever form it may appear, are we authorized to recur to surgery? Some good results in cases of medium gravity have already given a favorable answer. But if the symptoms are serious and the condition of the patient alarming, we should not hesitate to propose an operation which presents the only chance of salvation. We made this proposition in vain to the family of our patient. (G. H. MALLETT, New York.)

OBSTETRICS.

UNITED STATES.

A Case of Presentation of the Cord.

WM. R. WHITE (*Atlantic Med. Weekly*, May 1, 1897) was called on December 24 to see Mrs. H., who thought she was in labor, it being about the time she had expected to be confined. Examination, however, showed no dilatation of the os. Bimanual examination revealed a head presentation. The pains ceased and the doctor was not called again until January 14, about 6:30 P. M. The patient was in bed and having regular pains. The os was dilated to the size of a silver quarter, and the unbroken membranes could be easily felt. The next object recognized was a loop of the umbilical cord, whose pulsations could be plainly felt; back of this was the foetal head in the left occipito-anterior position. The loop seemed to include about three inches of the umbilical cord, was surrounded by a small quantity of the amniotic fluid, and was in front of the advancing head, being kept there by the intact membranes. It was a case that called for careful management, and the question of interference arose. It was impossible to replace the cord by manipulation, as the woman lay. An hour later there had been practically no change in the situation. The membranes were still intact, and with the increasing dilatation of the os, the loop of cord was rather greater than before. Still it seemed unwise to alarm the patient by suggesting interference, and the fact of the membranes remaining unbroken led to the hope that the labor might end more successfully if left to nature. Vaginal examinations were made every fifteen minutes for the next two hours, and no unfavorable changes occurred. The head kept descending with the loop of cord just in advance, regularly pulsating.

The foetal heart sounds were good, but there was intense anxiety as to the termination of the case, as the doctor feared censure for delay in acting should an accident to the child occur from pressure on the cord. By nine o'clock the os was fully dilated, and the large, pulsating loop of cord within the unbroken membranes

was at the vulva. The pains were strong and frequent, the membranes ruptured and the loop of cord was delivered, followed almost immediately by the head, and delivery was soon completed. The child was in perfect condition, and weighed nine and a half pounds. It cried lustily as soon as born. None of the family knew the danger or the intense anxiety that the doctor had felt for three hours.

The case is reported because of the infrequency of this complication, and the unusually favorable termination. In this case nature was kind, but how often would it be justifiable to allow the case to go on without interference until the head had descended too low for podalic version? Again, was it right to take the chance?

In cases of this kind there is little or no danger to the mother, but the danger to the child from pressure on the cord is imminent.

The "American Text-Book of Obstetrics" gives some authority for the policy of non-interference, so long as the membranes are unruptured and the pulsations of the cord distinct. But if there is pressure upon the cord and asphyxia of the fœtus threatens, either the cord must be replaced, or there must be a very prompt delivery by forceps or version. With the most skillful interference the fœtal mortality in these cases is from thirty to sixty per cent.

In one other case, seen in consultation, there was a shoulder presentation, ruptured membranes, and several inches of cord (with no apparent pulsations) lying in the vagina. The woman was without pains, and these conditions were said to have existed for half an hour. The doctor had told the family that the child was dead. On using the stethoscope, however, a faint fœtal-heart sound was heard. The patient was immediately etherized, and a small and apparently lifeless child delivered by podalic version. After half an hour's efforts at resuscitation the child revived and was soon out of danger.

A Case of Face Presentation with Posterior Rotation of the Chin.

MAX B. GOMBERG (*Atlantic Med. Weekly*, May 29, 1897) reports the case of a primipara, twenty-eight years of age, to whom he was called on February 25, 1897. He was told that she had been in labor, without medical attendance, since the 21st, and had had no movement of the bowels for three days.

Vaginal examination showed the cervix soft and elastic, with the unruptured membranes protruding through the os, which was dilated to the size of a silver half dollar. Fairly strong pains occurred at intervals of half an hour.

The abdominal walls were so tense that the position of the foetal head could not be determined, though it could be felt above the pubes. Foetal heart sounds were distinct at the left of the umbilicus. Inability to reach the presenting part per vaginam, the shape of the abdomen and the length of time the woman had been in labor showed that a faulty presentation existed, and, as the woman was somewhat exhausted, a consultation was held that afternoon. The consultant ruptured the membranes in his endeavor to diagnose the presentation, and it was found to be a face presentation, with the chin at the sacrum. He, however, advised that the labor be allowed to proceed without interference, as it would "come out all right." Four hours later, as there was no change in the position and the patient was more exhausted, Dr. Gomberg called on the consultant, and urged him to see the patient at once; he declined, and again reiterated his belief that "it would come out all right." Not being satisfied, another physician was called, who at once decided that immediate delivery was imperative. The patient was etherized, and attempts were made to extract the child by forceps, but the head was so large and so tightly wedged into the pelvis that the efforts were unsuccessful. Podalic version was resorted to, and a badly asphyxiated child was delivered, which died in a few minutes. The cervix was lacerated, and the perinæum was torn into the rectum, the latter was repaired and the patient put to bed after being an hour and a half under ether. Her pulse was 170 and she was in severe shock. Vomited but little, but was so weak on regaining consciousness that she could not speak above a whisper. The next day the pulse continued the same, temperature normal in the morning, but going to 102.4° F. in the afternoon. Patient complained of great thirst and pain in the abdomen. Morphine to relieve the pain was given, also strychnine and Basham's mixture. There was no vomiting that day, but on the 27th it set in, at first light and frothy, but soon appeared like coffee. Thirst and abdominal tenderness continued, with marked tympanites. On the 28th, the pulse became irregular and very rapid, temperature sub-normal, vomiting incessant, weakness extreme. She sank grad-

ually, and died early on the following morning. No autopsy was performed, as it was impossible to obtain the consent of the friends.

Tubal Pregnancy and Appendicitis.

DANIEL B. D. BEAVER (*The Med. and Surg. Reporter*, Philadelphia, May 29, 1897) reports the case of a patient brought to St. Joseph's Hospital, January 9, 1897, who had had four children and two abortions, the last occurring ten months previous to time of admission. On September 29, while menstruating, she got wet and had a severe cold with pain in the abdomen. The menstrual flow continued irregularly during an entire month. About that time she was taken with a severe pain in the left hypogastrium, and had bearing-down feelings; she suspected pregnancy. Her family physician told her there was a small tumor in the left ovarian region. From that time until her entrance into the hospital there was more or less bloody discharge from the vagina daily. It was usually of a bright red color, excepting for one or two days after severe attacks of pain, when it became dark chocolate color. The loss of blood was ordinarily small, but on several occasions there was profuse hæmorrhage. The discharge contained shreds of tissue. The attacks of pain occurred at intervals of from one to two weeks and lasted from two hours to two days. At first the pain was in the lower abdomen, but later the center of pain was on the waist line and to the left. She became thin and anæmic. Inspection of the abdomen showed a prominence five inches in diameter at the left and a little below the level of the umbilicus. The tumor was smooth and sensitive, not so hard as a fibroid, or so elastic as an ovarian cyst. On the anterior surface there was a hard nodule about the size of a walnut. Vaginal examination showed the uterus displaced to the right, the cervix soft and patulous, the fundus enlarged and closely attached to the tumor, which extended downward behind and to the left of the uterus. The tumor was immovable. The patient's temperature and pulse were normal. Extra-uterine pregnancy, probably of three and a half months' standing was diagnosed, and an immediate operation was advised, as it seemed probable that the sac had not ruptured.

The following day the abdomen was opened in the median line, showing the tumor covered by the omentum, which was weakly ad-

herent to it in patches. No blood or clots were found in the peritonæal cavity. The visible part of the tumor was of a grayish color, mottled with spots of a venous blood color, and with some projecting nodules of a darker color. It was covered by a translucent membrane, under which were vessels of varying size up to that of a large straw, which, from their light color, probably carried arterial blood, although they showed no pulsation. The tumor was very tense, with no distinct sign of fluctuation. The introduction of a small trocar to the depth of three inches was followed only by the oozing of a very little dark bloody fluid. This led to a suspicion of blood clots, and that the sac might have been already ruptured. The adhesions of the bowel behind the sac were very extensive. A gentle effort to detach a visible part of the small intestine was followed by a profuse hæmorrhage, uncontrollable either by pressure or ligatures. Hemostatic forceps cut through the fragile tissue of the sac, and failed to arrest the bleeding. The sac was immediately torn open and a large mass of clotted blood with fibrinous bands running through it was scooped out, and a strong double silk ligature put around the Fallopian tube, close to the uterus. The legs of the fœtus were now seen in the left posterior part of the sac, with the head and body protruding from it into the peritonæal cavity, in front of the descending colon, between the crest of the ilium and the ribs. The cord was intact and descended to the bottom of the sac. The placenta was left undisturbed. The fœtus was in its normal sac of membranes, free from the clotted blood.

The right tube was distended with fluid, and with the ovary attached to the tumor behind the uterus. Both were excised.

The peritonæal cavity having been cleaned, a puckering string was put around the opening in the large sac, and both ends passed through the abdominal wall at the lower end of the incision. The peritonæum was then stitched to the sac below the string, and the skin above or external to it, leaving an opening in the wall and sac an inch and a half in diameter. The sac was packed with iodoform gauze. As the patient was depressed and cold, the abdomen was flushed with a warm saline solution, which revived her. The wound was closed with continued silk suture of the peritonæum and interrupted silkworm in the external portion.

Recovery was uninterrupted, save for an attack of indigestion and intestinal colic five weeks after the operation. On the thir-

teenth day a small stitch abscess was opened. On the thirty-eighth day the ligature which was put around the Fallopian tube appeared and was extracted. The vitality of the sac was maintained, excepting a narrow strip over the ligated tube. This portion came away gradually in small shreds. The extraordinary features of this case are the copious hæmorrhage into the broad ligament, the manner of the bleeding, the relative position of the clot and fœtus, and the treatment of the tube and sac.

The quantity of the blood effused as indicated by the size of the tumor, and the intersection of the clot by fibrinous bands indicate small and long-continued hæmorrhages, as a sudden hæmorrhage of that extent would probably have caused rupture.

The clot occupied a place in the tube close to the uterus, while to the outside or left of it was the foetal sac, so complete that not even a drop of blood had entered from the seat of hæmorrhage. The bleeding apparently came from the proximal side of the placenta in the tube, through which it found its way to the uterus and vagina, the excess clotting *in situ*. The presence of the clot would retard for a time the bleeding until the serum had gradually passed into the uterus, then a fresh hæmorrhage took place. By the gradual growth of this semi-organized clot the foetal sac was displaced upward and outward.

Ligation of the Fallopian tube, without removal of the parts beyond the ligature has not, so far as the writer can ascertain, been reported as having been done successfully. Removal of the sac with the placenta was impossible in this case without incurring serious danger to the patient, as the bowels were firmly adherent to fully one-half of the large sac and broad ligament. The placenta was deep down in the folds of the broad ligament, and hence clear of the peritonæum, and with a sac large enough to be stitched to the edges of the wound with ease, and without undue tension it seemed to offer the best chances for life. Necessity for artificial drainage of the peritonæal cavity was obviated. Even had the whole sac sloughed there would have been time for adhesions around it to wall off the peritoneal cavity. The only change that would seem of advantage would be the ligating of the tube before disturbing the tumor, thus preventing bleeding.

The account of three cases of appendicitis in males follows in the paper.

GREAT BRITAIN.

Note on Auto-Intoxication during Pregnancy.

J. CHRISTIAN SIMPSON (*Lancet*, July 10, 1897) refers to Clifford Allbut's paper on "Albuminaria in Pregnancy" (*Ibid*, Feb. 27, 1897) as presenting strong reasons favoring the toxic origin of this condition. As strengthening this view the writer refers to two conditions, viz.: salivation and eclampsia. While the vomiting of pregnancy is usually preceded by a "rush of saliva in the mouth in common with ordinary vomiting, in certain cases the amount and the persistence of the salivation is an independent phenomenon. Ludwig says "the saliva is really secreted from lymph present in the lymph spaces of the gland." Thus "we may have secretion without a blood stream" through the glands; while "if atropia be given to an animal, stimulation of the corda tympani nerve produces dilatation of the vessels, but no secretion of saliva. It is important to note that the secretion of saliva "is not a mere process of filtration, such as, perhaps occurs in the glomeruli of the kidney." The amount of saliva secreted by some pregnant women may reach many quarts in twenty-four hours. This condition is most common during the early months of pregnancy, but may persist all through gestation and for two weeks subsequent, as noted by Green. Persistency distinguishes it from that form of hypersecretion known as "paralytic secretion" which lasts about eight days. The hypersecretion of pregnancy contains no ptyalin and a smaller amount of sodium salts than normal saliva resembling what is called "corda saliva" rather than the result of sympathetic stimulation, except when this has been prolonged, for the saliva resulting from moderate stimulation of the sympathetic is scanty and contains a very large proportion of solids. Stimulation of a distant sensory nerve may cause salivation, certain uterine conditions—even menstruation—may be a factor in its accomplishment; such salivation is called "a purely nervous disorder" and controlled by nerve sedatives.

The Toxic Theory of Salivation.—According to Bouchard, one of the toxic principles in normal urine is a sialogogue; experiments with ordinary urine do not produce this effect as "the total quantity of urine sufficient to kill does not contain the sialogogue in

sufficient quantity to produce its physiological effect;" but if the urine deprived of part of its toxicity, as by decoloration, be injected, salivation is produced. By a process of exclusion too elaborate to detail, Bouchard has defined this toxin to be "a stable organic substance, not fixed by charcoal, soluble in alcohol, and distinct from the diuretic (urea) or the narcotic toxin." It is found in greater quantities in the blood, liver, and muscles than in the urine. Its chemical nature is unknown nor has it received a name. The intravenous injection of an alcoholic extract of normal urine produces in rabbits salivation during the comatose state, that lasts for forty-five minutes, equal to that produced by jaborandi. Alcoholic extract of blood produces rapid salivation, together with muscular weakness and convulsions. As this toxin is found in the blood, liver and muscles it is probable that "it is from the blood that the kidneys get this substance which causes salivation."

With regard to eclampsia, it should be remembered that two convulsive principles are found in normal urine. One is a "fixed stable organic body, destroyed by carbonization, yet retained by charcoal; it is insoluble in alcohol, as either a base or a salt, and may belong to the group of coloring substances." The other is fixed and inorganic, and is, in fact, potash. Faulty elimination of these products might be sufficient to induce eclampsia without other waste products which probably accumulate during pregnancy. There are two primary and certain secondary sources of auto-intoxication to consider: First, there may be primary derangements of the liver, with secondary intestinal decompositions, and later renal irritation and insufficiency from absorption and excretion of toxins. Second, there may be a primary renal insufficiency so marked that if the hepatic and intestinal functions are slightly deranged serious symptoms may arise which would not have been induced had the kidneys been acting normally. Whether intestinal derangement is an active factor in the case might be determined if it were possible to estimate the ratio between the free and aromatic sulphates in the urine. Hunter on the causation of pernicious anæmia, showed that an increase in the ratio of aromatic over free sulphates is evidence of intestinal decomposition and putrefaction, and that "the destruction of the blood was effected by the action of such poisons absorbed from the gastro-intestinal tract." Not every case with an inefficient liver or kidney is attacked with eclampsia. Acetone in the urine is

indicative of hepatic derangement. Vicarelli found acetonuria in nine cases out of one hundred and thirty-seven cases, all of whom were delivered of dead infants. The acetonuria disappeared in four days; no mention is made of eclamptic symptoms. Stumpf found the urine of eclamptic cases contained more sugar, even before the attacks, than the urine of ordinary pregnant women, doubtless the result of hepatic derangement. As one of the convulsive toxins in the urine probably belongs to the group of coloring substances, the relation between hepatic and intestinal derangement and convulsions is intimate. Van der Velde found that pregnant rabbits were more sensitive to the action of normal human urine than non-pregnant animals. Clonic convulsions appeared after the injection of 23 c.c. of urine, whereas 51 c.c. of the same urine produced no effect on non-pregnant animals. The defibrinated blood of a pregnant rabbit caused convulsions when 18 c.c. per kilogramme had been injected, while the blood from a non-pregnant rabbit required 25 c.c. to produce any effect. When the urine of the same animals was injected, that of the pregnant one caused convulsions with 18 c.c. per kilogramme, while 30 c.c. per kilogramme from a non-pregnant rabbit caused no convulsions. This shows both an increased activity during pregnancy and a greater susceptibility of the nervous system to convulsive toxins, and this does not cease immediately after labor. This, and the fact that the blood is the source of the toxicity are proved in one instance, where there was rapid reaction to the injection of blood taken three days after labor, though the urine was not more convulsive than normal; in another case the effect of the injection of blood was noticeable up to the eighteenth day after delivery. "There is thus a renal insufficiency which causes accumulation of toxins in the blood during pregnancy, in addition to those found in normal urine, and the combined results may be seen in the symptoms of eclampsia." The toxic theory of eclampsia is also supported by the occurrence of various neuroses during pregnancy or the puerperium, as the toxicity of the blood persists during involution any renal insufficiency will be an important factor in the production of such neuroses. Whitfield reports a case in which neuritis developed on the third day after delivery in a woman who had persistent vomiting all through pregnancy which ceased immediately after labor. Desnos saw "a case of muscular atrophy of the limbs of rapid evolution coming on dur-

ing pregnancy after severe vomiting." It seems possible that the severe muscular exertion of labor by adding rapidly the waste products of muscular exercise to the toxins present, together with renal inadequacy may be sufficient to determine puerperal neurosis; since neurosis can be caused by the faulty metabolism of gout, rheumatism and diabetes.

Treatment.—It is safe to assume that a majority of cases suffer from a combination of the morbid processes stated. It is well to regard salivation as an early danger signal. Bouchard says that "the skin and lungs cannot vicariously aid the kidney which has become incapable of accomplishing elimination." He has calculated that one liter of water per intestine is one litre less per kidney, which would have eliminated fifty times more urea as urine in the healthy state. Though diarrhoea does not remove urea from the blood it removes other poisons from it. Therefore hydragogues in uræmia are rational, but potassium salts should in no case be used. As the decoloration of bile and urine diminish their toxicity, the administration of charcoal is of value by decolorizing some of the pigments and fixing others, thus removing a constant source of readily-absorbable toxins. Naphthalin and other intestinal antiferments may be used. Also mercurials, especially if the liver is inefficient. Milk is the best diet in small quantities. Jacoud recommends inhalations of oxygen when the temperature is sub-normal in uræmia, indicating imperfect oxidation. Possibly the best results in eclampsia with renal insufficiency may be obtained by combining oxygen inhalations with bleeding. Thirty-two grammes of blood contain fifty centigrammes of extractives; as the daily elimination of these by the urine is eight grammes, this equals one-sixteenth of the daily total, and probably more in the pregnant state. More extractives can be removed by bleeding than by any other source except the kidneys. A loss of thirty-two grammes by two leeches, removes as much toxic matter as two hundred and eighty grammes of watery diarrhoea, or one hundred litres of sweat could do. In an emergency, bleeding is a most efficient remedy. Possibly the loss of blood that occurs at normal labor may account for the sudden disappearance of toxic symptoms prior to delivery.

(T. W. CLEVELAND, New York.)

PÆDIATRICS.

UNITED STATES.

Two Cases of Friedrich's Disease.

H. N. MOYER (*Northwestern Lancet*, June 15, 1897) describes the following two cases of brothers: The elder, sixteen years old, was well up to four years ago, when he had an attack of diphtheria: on his recovery it was noted that he had loss of power in the lower extremities, with staggering and swaying on walking, which symptoms have steadily increased. In walking he places the feet wide apart and inverts the toes; the gait is unsteady, the body sways, he cannot walk a straight line, and almost falls on attempting to turn; he can stand unsteadily with feet close together if his eyes are open, but falls if they are closed. He cannot touch the tip of the nose with his finger, nor, with eyes closed, place the heel of one foot on the toe of the other. The knee jerks are abolished. There have been and are no sensory disturbances. The pupils and eye grounds are normal and there is no nystagmus nor muscular tremor. The boy is small and his expression is vacant, but he is fairly intelligent. The next brother, fourteen years old, has been affected for two years. The disease began with the same symptoms as in the elder brother; they were aggravated after recovery from a fracture of the leg six months later. The symptoms now are identical with those of the elder, but less marked; he has, however, complained for a short time of some pain in the legs and stiffness of the knees.

The father and mother are healthy. They have had in all twelve children. Four died in infancy but the remainder, with the exception of the cases reported, are well. No loss of knee jerks or ataxia—the only two symptoms presented by the affected children—could be detected in any of the rest of the family. The author does not regard the attack of diphtheria in the first case as causal; but thinks that the ataxic symptoms were probably present but unobserved before that time. Regarding the aggravation of the symptoms following the fracture in the second case, the author compares

another case in a child of four whose ataxia was greatly increased after an attack of typhoid fever.

The ataxia, the absence of knee jerks, the normal pupils and lack of ocular symptoms, and the onset of the disease before puberty would diagnose these cases as Friedrich's ataxia from cerebellar heredo-ataxia.

IRELAND.

Clinical Pictures of Children's Diseases.

LANGFORD SYMES (*Dublin Jour. of Med. Sci.*, July, 1897) says that to keep our treatment of infantile diarrrhœa on a scientific basis we must remember that the conditions are: Poisoning and fermentation from micro-organisms, indigestible and undigested food with deficient evacuation, and a profuse and dangerous drain of water from the system.

As *general management* we must keep the child warm with a wool jacket and flannel binder, wrappings of cotton wool about the arms and legs, and hot bottles; the chief loss of heat is through the skin, especially in a child, whose skin surface is large in proportion to its body weight. The cleanliness of bed and napkins must be absolute. Rest is essential; and all external irritations, such as eruptions or excoriations must be relieved. If thrush is present the mouth must be frequently cleansed with glycerine of borax, two per cent. peroxide of hydrogen, or salol in glycerine.

To *remove the irritating particles of food*, follow Nature's suggestion and give a purge. The best drug is castor oil; it may be given either as a single large dose or in doses of five minims every hour; one minim of the liquor hydragryi perchloridi may be added to each dose; rhubarb also acts well, or a mixture of rhubarb and soda. In chronic cases ten or fifteen minims of castor oil every morning is useful. We must except the collapsed states of an acute choleraic diarrhœa, in which a purgative is often, but not always, unsafe.

Regarding *dict*, except in breast-fed infants the milk must be changed at once, the diarrhœa being a proof of its disagreement. We may substitute (1) a wet-nurse; (2) diluted milk; one-third water is enough to break up the curds; we may use plain boiled water, soda-water or barley-water; lime-water is useful for its alkalinity only, but is useless as a method of administering lime as it contains

less lime than cow's milk. A good mixture is one ounce each of milk, lime-water and boiled water. (3) Humanized milk, really the only scientific artificial food; in rough terms, we should keep the proteids near one per cent. The following mixture, cream milk, is good: Milk and water, each three ounces; cream (twenty per cent. fat) and lime-water, each one ounce; and lactose three drachms. The cream milk obtained by Gartner's method, a mixture of equal parts of milk and sterilized water being poured into a centrifugal separator, so arranged that the outgoing streams are equal, is excellent. Rotch's mixtures, of proportions varying with the age of the child, are of great value. Another simple and approximately correct method is to skim the cream, make rennet whey of half the remainder, then mix all three together leaving out the separated curds; (3) peptonized milk, diluted one-third; (4) good condensed milk rich in fat may be of value; (5) sterilized milk; this may produce scurvy, but the danger has been much exaggerated. Sufficient sterilization is simply accomplished by placing the milk in a china vessel which stands in cold water, the water being then boiled for fifteen minutes. There are also various sterilizers in the market; (5) pasteurized milk; pasteurization does not render tuberculous milk innocuous but makes the milk of a mixed herd safe. Furthermore we should eliminate starch from the food, even barley or rice-water being often inadmissible. We must also see that the feeding apparatus is suitable; the bottle should have a wide mouth, no tube, no angles and no indentations; should be transparent and easily cleansed. It may be necessary to stop the milk altogether in severe cases; as substitutes we may use albumen water, white wine whey, raw meat juice, or various other meat preparations.

As *antiseptics*, the most useful are calomel, with or after an initial dose of castor oil, frequently, in fractions of a grain; resorcin, from half a grain to five grains; it is active in the stomach and upper intestinal tract, and should be continued after the diarrhœa has ceased; bismuth salicylate, one to three grains every three hours; benzol, naphthol, used by Fenwick up to thirty grains a day; sodium salicylate, mercury and chalk, liquor hydrargyri perchloridi, glycerine of carbolic acid, naphthalene, glycerine of borax, thymol, listerine and salol may also be used; lactic acid is said to check green diarrhœa and may be given in drachm doses of a two-per-cent. solution.

Intestinal irrigation is of much value. In one hundred and thirty

children under one year, it was found that in over three-quarters the ileo-cæcal valve permitted the passage of water into the ileum. The irrigation should be given in bed, the rectum first washed out, and then the bowel irrigated with normal saline solution by a soft rubber catheter from a glass douche elevated about eighteen inches. Washing out the stomach is recommended by Vaughan; he uses a solution of sixty grains of sodium bicarbonate in a pint of water at 100° F. Continental writers have suggested resorcin or boric acid solutions.

Of *sedatives to allay excessive peristalsis*, the best is opium, but it must be used with care; we must remember that in checking the peristalsis it also locks up the poison in the intestine. One quarter of a minim of the tincture may be given to a child three months old; opium is good combined with the glycerine of carbolic acid and castor oil, or in the form of pulv. ipecac co. combined with carbonate of bismuth and sodium bicarbonate.

As a *restorative for collapse*, fresh-boiled water is strongly indicated; if it cannot be given by the mouth it may be injected warm into the rectum. Stimulants are advised by some and not by others; if indicated, brandy or strong coffee is suitable, or we may give camphor, a quarter of a grain to two grains, suspended in mucilage with glycerine. A warm bath containing a tablespoonful of mustard in a muslin bag, followed by wrapping in warm blankets may be useful. Subcutaneous injections of horse serum and of sterilized saline solution have also been used.

Regarding prophylaxis, the author says that all these diarrhoeas could be prevented by attention to the following matters: (1) The scientific regulation of artificial feeding; this involves consideration of the size of the child's stomach and the child's age and weight, the quantity of each feeding and the number of meals in the twenty-four hours, the selection and composition of the best substitutes for human milk, with their method of preparation and the kinds of apparatus required, the temperature of the food and manner of administration, its preservation, and the cleanliness of all apparatus; (2) the purification of the ground, consisting in sanitary improvements regarding overcrowding, ventilation, disposal of refuse and cleanliness of all surroundings, the poisonous organisms appearing to be derived from the superficial layers of earth; (3) the purification of milk; to insure this the following regulations are suggested: that

cows should be grass fed on pure pasture only, but that stall-fed cows, if existing, should get only green fresh food; that the water supply should be pure; that the cows should be kept very clean and their udders washed before milking; that they should be periodically skilfully examined, only healthy cows being milked, the sick or condemned animals being at once removed from the dairies; that each animal should be branded on the horn; that a government license should be required to sell milk; that cow-houses should be so constructed that the walls and floors can be washed down with a hose and disinfected, and the yards kept clean; that no consumptive or unhealthy people should be permitted to work in dairies; that the size and shape of milk cans should be regulated, their construction being such as to facilitate thorough cleansing; that the milk should be properly cooled to prevent the development of micro-organisms; and that it should be kept in suitable covered vessels till used. Such precautions as these would render sterilization of the milk unnecessary and summer diarrhœa a rare disease. Of course care must be taken that the milk is not infected in the house after delivery by unclean containers, utensils or surroundings. The author also commends an order of the Buffalo Board of Health, which makes it unlawful for any person to use or sell, for children under three years of age, any feeding device that has connected therewith a rubber tube, hose, or similar contrivance. (A. D. CHAFFEE, NEW YORK.)

ITEMS OF INTEREST.

The American Pædiatric Society on Infantile Scurvy.

The American Pædiatric Society is making a collective investigation of infantile scurvy as occurring in North America, and earnestly requests the coöperation of physicians, through their sending of reports of cases, whether these have already been published or not. No case will be used in such a way as to interfere with its subsequent publication by the observer. Blanks containing questions to be filled out will be furnished on application to any one of the committee. A final printed report of the investigation will be sent to those furnishing cases.

J. P. Crozier Griffith, M.D., chairman, 123 South Eighteenth street, Philadelphia; William D. Booker, M.D., 853 Park avenue, Baltimore; Charles G. Jennings, M.D., 457 Jefferson avenue, Detroit; Augustus Caille, M.D., 753 Madison avenue, New York City; J. Lovett Morse, M.D., 317 Marlboro street, Boston, committee.

Legal Responsibility of the Gynæcologist in France.

The following case of an over-ambitious young operator in Paris is sufficiently pertinent to the surgical practice of recent graduates in this country to justify its quotation at length. We give it in the words of the Paris correspondent of the *Cincinnati Lancet-Clinic* of a recent date:

* * * * * A young doctor of that city (Paris), with a diploma eighteen months old, was called to see a woman attacked with a fibrous tumor. Contrary to the advice of a very distinguished surgeon of Bordeaux, who urged that no operation be performed, the rising aspirant for gynæcological honors called in another would-be gynæcologist even younger than himself, and the two, with the assistance of a chamber-maid, proceeded to chloroform and operate. A total abdominal hysterectomy was performed. The woman was kept under the operation for two hours. The night following the operation the patient died suddenly. The autopsy revealed two imprudences on the part of the operator. The operator had left, in his bungling haste, a pair of forceps in the abdominal cavity, and a hemorrhage had carried off the unfortunate patient. * * * * *

Dr. Lasalette was taken into court and condemned to two months in jail and 500 francs fine. Badly advised, he carried his case to the Court of Appeals. This court raised his punishment to three months in jail and sustained the fine. The feeling against the unusual belly-splitting now going on in Continental Europe is very bitter. There is a good chance that an enactment will be passed forcing the gynæcological specialist to have the sustaining opinion of a regular surgeon and a general practitioner before any operation shall be performed.



IN MEMORIAM

WILLIAM THOMPSON LUSK, M.D., LL.D.

FROM A VERY RECENT PHOTOGRAPH

See page 615

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IN MEMORIAM.

WILLIAM THOMPSON LUSK, M.D., LL.D.

BY HENRY C. COE, M.D., NEW YORK.

Soon after we parted for the summer an honored Fellow of our Society suddenly passed into the unknown. Death has singularly spared our company during the past decade, but when he rudely summoned one of our noblest and best, we felt that the breaking up of our goodly fellowship had indeed begun. The pathetic cry of the Litany was not answered, but who can say that it was not best? His end was unostentatious, like his life. In the midst of restless activity, at the period of a well-rounded career, he went apart and fell asleep. To be spared the decay of mental and physical powers, to depart at the moment of victory—was not this the enviable lot of the father of the Olympian victor whom the ancient philosopher declared to be the happiest of men?

Others will utter more elaborate and fitting eulogies; be it our mournful, though pleasant, duty to offer a simple tribute to the memory of one who met with us here in the years that are gone, and whose gracious influence rests upon us as a benediction. I might speak eloquently of Dr. Lusk's international influence upon obstetric medicine, of his classical book, his numerous contributions to current literature, of the impress which he left upon his students—but here, among those who knew him best, we think of him rather as the kindly associate, the fine type of the physician and gentleman,

* Read before the New York Obstetrical Society, October 19, 1897.

which, pray Heaven, may never become wholly extinct in this age of fierce competition, when it sometimes seems as if our noble profession were in danger of degenerating into a trade.

Although it might seem more proper that one of his own contemporaries should perform this duty, there is a certain fitness in the tribute coming from us of a younger generation to whom he was at once teacher, example, and friend. If, in mystic faith of Swedenborg, the departed are still with us in spirit, sharing in our daily life, it would be most distasteful to him to hear words of fulsome flattery, who was himself so modest and retiring that, like the wise Athenian, he ever held that "he only knew that he knew nothing." I shall refer only to Dr. Lusk's relations to the Obstetrical Society. Our old volumes of Transactions furnish most interesting, nay even, inspiring reading. The list of founders far back in 1863 is a list of intellectual giants, of whom we may well be proud. To them Lusk was one of the young and rising men. Admitted to the Society in 1872, he was Vice-President the following year, and was elected President in 1879, when most of us were in college, or were just beginning the study of medicine. I have looked through all the Transactions of the last quarter of a century and find abundant evidence of his mental activity and interest in the Society. His papers and clinical reports are marked by the same peculiarity, which was only accentuated in his later years—a disposition to publish unfavorable rather than successful results, when it seemed to him that they taught a valuable lesson.

Promptness in acknowledging errors in diagnosis and technique, a tendency to criticise himself more severely than others would criticise him, an earnest desire to point out the way by which his *confrères* could avoid his mistakes—this was the marked characteristic of all his public utterances. The modest, self-deprecating manner with which we were so familiar increased with advancing age and experience. Quick to seize upon all that was good in new theories and surgical methods, he was pre-eminently conservative and allowed younger and bolder spirits to push ahead, while he waited and thoroughly tested the old ways before he abandoned them for the new. This mental attitude, which rendered him such a safe teacher, constituted him a sort of balance-wheel in many discussions in which advanced, or what then seemed heroic, methods were generally advocated. Whenever Lusk spoke, in his quiet,

modest way, none of his hearers had any doubt that he was thoroughly in earnest, and that the sentiments which he expressed were those which influenced his daily work. So unobtrusive was his manner that even we who knew him so well often forgot that his words carried weight all over the world, and when uttered in foreign medical associations, were received as the dicta of a master. Thus has it ever been that "a prophet is not without honor save in his own country."

We do not recall that Dr. Lusk ever sought to pose as an innovator, nor did he read a paper before this Society which advocated any new or startling procedure. He seemed to feel that his mission was to weigh carefully new facts and to compare them with the old, to warn against too sweeping generalizations, and the too ready adoption of radical methods. When he had occasion to introduce the personal pronoun it was always apologetically. His was the reverent agnosticism of true science. He had no sympathy with loud pretensions, nor did he seek to be "heard for his much speaking." Of late years he came but rarely to our meetings, and then always because he felt that he had some special message to deliver.

It would be a great mistake to infer that because he was by nature, as well as by choice, conservative, Dr. Lusk was not fully abreast of modern surgery. I doubt if there is one here present who followed more closely the work of foreign operators, not in the library, but by actual attendance at their clinics. His active, restless mind was like a sensitive photographic plate, which needed only an instant's exposure to the light of truth in order to retain a lasting impression. He was keenly alive to all that was transpiring in the medical world, and you will remember the deep interest which he manifested in the work of his younger brethren in this city. If a new or especially difficult operation was to be performed, Lusk was sure to be on hand. Such a man might be called "conservative," but his conservatism was the outgrowth of wide observation and experience; it was not a voluntary mental stagnation, due to ignorance of the vast progress of modern surgery.

We recall with mournful tenderness the kindly attitude of our lost friend in public debate. He was ever considerate of his opponent's feelings—a gentleman in the original interpretation of the word, with a fine sense of the fitness of things and a never-failing courtesy that disarmed all irritation. How these traits are remem-

bered now, when he, alas! is only a memory. The keen, eager, kindly face, the earnest air, the low voice, never raised in harsh answer or biting criticism—these, with the bright smile of welcome, the warm hand-clasp, all are gone forever.

“To lose him from our eager ken,
To lose his thoughts, to ripeness grown,
To lose his presence, are as when
A richly-freighted ship goes down.”

As he was here, so we knew him in his work. He was too broad for petty rivalries and jealousies, too honest and consistent to swerve a hair's breadth from the straight course which he had marked out, either to win or to keep patients. If he thought that an operation was not indicated, no man, no financial consideration, could induce him to perform it. He might feel keenly the adverse criticism of his associates, but he adhered to his own standard of right. Professional honor was not an empty name to him, but an integral part of himself. Its influence pervaded his work in the consulting-room, at the hospital, wherever he came in contact with men and women.

From this Society he went out to practice what he preached. We sometimes disagreed with him; some of us thought, perhaps, that he was a little old-fashioned, but we honored him for his consistency and recognized in him a true Bayard, *sans peur et sans reproche*. It would be pleasant to review our social relations with Dr. Lusk, to recall the many delightful qualities which rendered him so beloved, but I believe that every man who has lost a friend cherishes some memory of the departed which is peculiarly his own, and which it is not fitting to subject to cold analysis. It was good for us to have been with him, for none touched him in the press of life ever so slightly without perceiving the aroma shed only by the pure in heart.

You remember the touching description of how the Doctor of the old school was borne to his last resting-place. “Surely no funeral is like unto that of a doctor for pathos,” we read: but in the last splendid tribute paid to our friend by his professional brethren one felt that through the requiem ran a strain of triumphal music. And in after years it will be said of him, as was said of the first Napoleon: “Something great and good must have been in this

man, something loving and kindly, that has kept his name so cherished in the popular memory and gained him such lasting reverence and affection."

Sad indeed is the man who is remembered only for the books which he has written, the operations which he has performed, or the wealth which he has amassed during a long and successful professional career. But thrice happy he who, like our lost brother, leaves not only these evidences of a well-spent life, but a precious memory, cherished in the hearts of those made happier and better by his living. When we think of our illustrious dead our Society seems lifted to a higher plane. Surely we are surrounded by a "great cloud of witnesses." The superb Peaslee, the magnetic Sims, the genial Taylor, Barker's kingly presence, and now the gentle spirit which has been absorbed into the Eternal Light. What a rich heritage is ours! How great is our inspiration to carry on the work which they began, with the same enthusiasm, the same zeal for pure truth! Let us to see to it that no narrow personal aims, no petty dissensions prevent the fulfilment of this sacred duty. As, one by one, our elders turn aside to the wayside inn, let us cherish those who remain. They may seem old-fashioned or slow to adopt new ideas. But old fashions are often the best fashions, and many of our "new" ideas were conceived years before we re-discovered them. May no regrets be ours when we think after they have gone how little we appreciated them when they were still with us!

We offer our poor, imperfect tribute to the memory of one who lived among us so quietly and unostentatiously that few realized how rare and lovable was his character. Only two days before his death he uttered these prophetic words: "I do not care to have any resolutions offered about me after I am gone." It is in accordance with his last wish that I point you to the story of his life as his best eulogy.

SOME REMARKS ON THE USE OF THE HAND IN OBSTETRICS.*

BY MALCOLM McLEAN, M.D., NEW YORK.

During the past dozen years or so there has been noticeable a decided tendency among certain writers on obstetric subjects to discourage the use of the hand in our attempts to assist in the process of parturition; and, although there are many practitioners who may not be easily influenced by the suggestions of danger which these writers express sometimes very forcibly, yet there are many who are getting their first personal experience in this new decade, who readily accept their teachings as indisputable doctrine, promulgated *ex cathedra* for their guidance. Indeed, there is such a disposition in these days of startling innovation to fall in with the latest drift of thought without sufficient test of its claims that not infrequently valuable methods of practice are too easily allowed to be discarded for the sake of the new love, which often proves to be fickle and unreliable.

To merely name the various changes in gynæcological practice within the ten years just past would serve to illustrate our meaning. Having decided some years ago that we must almost abandon the vaginal route for the treatment of pelvic disorders—and extirpate with unerring promptness the offending appendages of the uterus—laparotomy or cœliotomy, with this end in view, initiated its mighty sway. Ere long it became a serious question whether any man—or woman either—could claim to practice gynæcology intelligently unless he or she had been able to leave that indubitable “mark” of skill upon the bellies of hundreds of their submissive patients.

To vary the accomplishments of our craft, however, there arose presently upon the scene certain gentlemen, who claimed to have demonstrated that, by the proper use of electricity, certain tumors might be rendered so innocuous that cures of hundreds by this method alone stood apparently to the credit of these celebrated, though misguided surgeons. But alas for human greatness! No

* Read before the New York Obstetrical Society, October 5, 1897.

sooner had we provided ourselves with the expensive machinery necessary to deal forth this occult curative agent, than a new dogma went forth—and electricity was pronounced not only useless but *injurious*, and those who once were bold enough to believe and to say that they had known its virtues, are bidden to hush their foolish babblings, and to amuse themselves, if they must, with the newer rays of Roentgen. The uterus, which had hitherto maintained more or less of its integrity, must suffer in its turn—with scrapings and divulsions, and packings—it still remained, *in situ* at least, a bold offender. So, while the abdomen was conveniently open for the removal of its disreputable adnexa, what more logical sequence than that the uterus, shorn of its fruit, should be evicted also. Accordingly hysterectomy came conspicuously to the front, and a race for records soon began. But now the abdominal route became well worn and prosaic, and the vagina once more became accessible to the surgeon's knife and scissors. And so the war goes on, and our renowned confrère from Paris well expressed it when he said that the difference in the manipulation of the abdominal operator and that of the newer vaginal hysterectomist was, "that one sticks his fingers in the wound and looks upward, while the other does the same and looks downward." And so it has come to be the question, not "How many adnexæ have you removed?" for pelvic disease, but, "How many hysterectomies have you done?"

To avoid the danger of appearing to digress into the unprofitable paths of frivolity, let us seriously observe that this tendency to catch the newest "craze" is not a silly allegation, but a real menace to thoughtful, scientific progress in our magnificent profession. To keep close to the thoughts which the writer wishes to express in this brief paper, he desires to give warning against a mischievous habit of seizing upon newly-accentuated theories in obstetrics, and being so carried away by them as to fall into a routine habit, without a firm basis of well-tried scientific knowledge of the facts of experience.

For example: Is it not reasonable to believe that the present prominence given to the operation of symphysiotomy may be the means of widespread mischief in obstetric practice?

Is it not likely to be substituted for safe and scientific methods of delivery in cases of dystocia by men whose diagnostic powers are not keenly developed or faithfully applied?

Will not many a pelvis be cut and torn asunder to relieve an obstruction which exists not in the passage but in the passenger? The writer has already known of such cases. And now it is widely taught that the modern obstetrician who has the fear of sepsis before his eyes may not so much as make a digital examination of his parturient patient without considerable risk of her safety from infection. The natural outcome of this teaching is that *manual* dexterity in assisting the suffering woman and her child is to fall more and more into a degree of desuetude, and artificial instrumental means are to be substituted. If this be true—and we firmly believe it to be so—it is certainly much to be deplored; for that *tactus eruditus* which can be so highly developed in the human hand can never be safely supplanted by unfeeling steel.

To a few remarks, therefore, upon the use of the hand unaided, in obstetrics, we would call your attention briefly.

For diagnostic purposes the hand (properly aseptized, of course, as it always should be) may be and should be carried so far into the pelvic canal as may be necessary to ascertain first, the condition of the passage in all its parts, and second, the size, condition, position, etc., of the child.

It is not enough in cases involving doubt or difficulty to rely upon the evidences obtained by the mere insertion of the *fingers* within the vagina. The superior strait, and the tissues about this region, cannot be satisfactorily studied without the free introduction of the *whole hand* into the vagina. The moment the hand has passed the contracting muscles of the introitus vaginæ, the fingers become free to explore in all directions without the slightest violence to the soft parts.

The first thing to be noted is the condition of the obstetric canal below the superior strait. The width, the degree of softness and distensibility, the moisture, etc., of the vagina may be instantly appreciated. Then the pelvic walls may be readily outlined and approximately measured. To ascertain the presence or absence of any growth or tumor is the work of a moment. The estimation of the diameters of the straits is very satisfactorily made, if some systematic manipulations be followed.

Thus, by previously ascertaining the measurements of the operator's hand in its different positions, he may establish a sort of code by which he may make internal measurements of the pelvis,

which cannot be equalled in accuracy by any mechanical device. The writer has found that a normal internal conjugate of four inches will just accommodate the hand with all of the finger-joints flexed, except the metacarpe-phalangeal joints, the bulb of the thumb being pressed firmly against the second joint of index finger. The measurement, taken in a direct line from the phalangeal joint of the thumb to the second joint of the little finger, will be found to be just four inches; and the points named, the knuckles of the flexed thumb and the flexed little finger, will be found to be the points which come in contact with the sacral promontory on the one hand and the pubic symphysis on the other. If the pelvic diameter be reduced and admitting only the same points, that is the same impinging joints of the thumb and little finger, while the extremities are all extended, a measurement of three and a half ($3\frac{1}{2}$) inches in diameter is the result.

Should it be necessary to withdraw the thumb and so bring the outside of the metacarpo-phalangeal joints of the index and little fingers in contact with the bony points of the pelvis, a diameter of three (3) inches is obtained. The measurements gotten by contact measurement through the middle joints of the three fingers, index, middle and ring, will be found reduced to two and one-half ($2\frac{1}{2}$) inches. The longer diameters of the superior strait, oblique and transverse, may be approximately estimated by abducting the thumb from the fingers in the first position.

The presentation and position of the child may be settled with a certainty which no other means can by any probability offer. And, as irregularities in the position of the head constitute a large preponderance of the difficulties in cases of dystocia, it is here that the intelligent use of the hand will do the most valuable service. Having learned beyond reasonable doubt that the parturient canal is normal, the fingers carried up about the nape of the neck and thence swept forwards to the helices of the ears, the exact position of the occiput may be at once learned beyond all doubt. The relative size of the head may be also learned so that the proportions of the passage may receive their due valuation.

If a faulty position like an occiput posterior digression, for instance, be found, nothing is simpler or more safe, nothing will avert more surely a dangerous complication in the further progress of the case, then to use the fingers already on the spot; to gently

draw down and rotate forward by a spiral motion, the occiput to a point where nature may safely complete the delivery. Even in certain face presentations by a dexterous use of the fingers, the head may be lifted, the occiput caught and brought down, all being accomplished within the pelvic cavity.

For the safe application of forceps in high position, the introduction of the hand is imperative, and many an injudicious application of this instrument may be averted by giving heed to the timely warning given by the hand.

It is not necessary to speak of the various uses of the hand in cases of version, prolapse of the funis, etc., but it may not be amiss to call attention once more to an oft-neglected factor in certain cases of dystocia, which may only be discovered by the naked hand in the uterus.

In malposition of the head, which seems unduly persistent, with the short unsatisfactory pains, suggestive of such a state of affairs, the fingers carried as before mentioned, well over the occiput to the nape of the neck, will not infrequently find a funis so entangled about the neck and shoulder of the child as to positively interfere with the proper rotation of the body and head.

In several instances the writer has met with these cases, and has easily relieved them by *reversing* the direction of rotation of the head, so as to carry the occiput completely across the pelvis, from one posterior plane to the *opposite* anterior, accompanying this manœuvre by external manipulation of the body.

In certain cases of rupture of the uterus, the careful use of the hand may be of great service—not only as a means of estimating the nature of the accident, but as an instrument for the delivery of the child *per vias naturales*, should the case warrant such procedure.

The writer is aware that to all these manipulations within the body of the woman there will be offered certain objections. It may be suggested, for instance, that we are giving mischievous counsel in authorizing so many occasions for invading the canal with a meddlesome hand. To this it need only be answered that a well-trained hand is safer within the mother's body than any mechanical instrument—and what shall be said when the instrument is in an untrained hand?

But, to return to the point suggested in beginning this paper, it will be objected that the danger of introducing septic germs with

the hand is such as to offset any probable good to come of such manipulations. To this we simply say that the operator who is unwilling or unable to sufficiently sterilize his hand for obstetric operations, is unfit to be trusted at the other end of an instrument of steel—boil he it never so wisely!

Furthermore, attention has before been asked to an element obtaining in all these cases, which is persistently ignored by the vast majority of writers.

Only the other day a writer laid great emphasis on the danger of the *introduced hand* because it necessarily would come in contact—microbes and all—"with the raw and bleeding surface of the uterus itself, so peculiarly exposed to septic invasion."

Now we wish again to claim that an intelligent, careful operator will *not* come in contact with the "raw and bleeding surface of uterus," but with the water-proof, germ-proof *membranes of the amniotic sac*, which still securely lines the uterus; and if the case be conducted with ordinary good judgment, those dreadful microbes will come out of the woman when the placenta and membranes are properly expelled.

In conclusion we will plead for a recognition of another factor in obstetric operations which is not infrequently lost sight of, especially in these days of the microscopic hunt: *Traumatism* in itself is often a menace to life, even though sepsis be not admitted; and, in so much as we avoid unnecessary traumatism, we also avoid dangers which may not be attributed to septic germs.

Certainly this brief and commonplace paper must not be closed without emphasizing in the strongest manner possible the virtue of aseptic precautions. Without this surgical cleanliness, the obstetric attendant is a living danger to the puerperal woman—unfit to enter the lying-in chamber—unfit to do the simplest operation there.

But we maintain there is reason to go further, and to educate the hand as well as the head, that its delicacy of appreciation of every abnormality, its incomparable skill in manœuvring for the welfare of the sufferer may not be driven from the field, because, forsooth, it is easier to boil an iron instrument than it is to take a conscientious bath.

A CLINICAL STUDY OF TWO UNIQUE CASES OF ABDOMINAL SECTION.*

I.—Duplication of Right Ureter. II.—Fibroid Splen—Splenectomy.

BY ANNA M. FULLERTON, M.D., PHILADELPHIA.

The cases I desire to report upon this occasion may, I think, be properly regarded as unique, as they both presented anatomical conditions which I had never met with before, and which a study of the literature of the subject leads me to think quite rare.

Case I. presented a complete duplication of the right ureter, which was discovered by its accidental division during the performance of an operation for double pyosalpinx and ovarian abscesses. Resection of the ureter was necessitated, with implantation of the distal end into the bladder.

The patient's convalescence was without event. A sketch of her clinical history is as follows: R. L., American, aged thirty-six, had been married fourteen years and had six children, the youngest two years of age. Her labors were reported as normal, although she suffered from serious lacerations.

I saw her first in February, 1897, at her home, Riverside, N. J., in consultation with Dr. Weeks, her family physician. She had been confined to bed since the preceding September with repeated attacks of pelvic peritonitis; and a few weeks before her physician had opened for her a large ischio-rectal abscess which still required draining and packing. Her general condition had been much affected by her illness. A pelvic examination proved the condition to be one requiring a speedy abdominal operation. The patient was removed to the Woman's Hospital in this city, and on March 10 I performed the operation. As was to be expected from the history of the case, dense adhesions existed, producing a matting together of intestines, omentum, and pelvic organs. Both tubes were occluded and greatly distended with pus and adherent to the ovaries which were also converted into pus sacs. In the enucleation

* Read before the Philadelphia Obstetrical Society, October 7, 1897.

of the appendages of the right side and the separation of adhesions which were exceedingly friable, a fibrous band was severed, through which ran two patulous canals, each of which was the size of a normal ureter. No blood flowed from the open orifices, hence I felt there could not be blood vessels. A long sound introduced into the orifices passed up in the direction of the kidney without resistance apparently to the pelvis of the kidney. A sound passed through the orifices directed toward the bladder, struck on a catheter which was introduced into the bladder. There was thus no difficulty in determining the nature of the accident and in discovering the abnormality of a double ureter which traversed the pelvis at a higher point than is normal. The two ureters ran side by side and were bound closely together. In the lower portion of their extent they were involved in the general inflammatory condition affecting the pelvic structures.

Ligating the cut ends connected with the bladder, I made an incision in the upper portion of that organ and implanted through it the distal extremities of the divided ureters, using fine silk and catgut sutures. The patient's bladder was kept drained by means of a self-retaining catheter for about ten days following the operation. She made a perfect recovery and returned to her home April 18, 1897.

Dr. Otto Ramsay, of Baltimore, Md., reports in the "Bulletin of the Johns Hopkins Hospital" (November and December, 1896), an autopsy in which this same abnormality of the ureter was found, but on the left side. The patient died of exhaustion from carcinoma uteri at the age of forty-five years. Beginning at the hilum of the kidney by separate pelves, between which there was no communication, the two ureters, bound closely together, ran side by side to the bladder, where they entered at distinct orifices, 1.5 cm. apart. They were dilated throughout their whole extent from the point where they were involved in the growth at the cervix uteri to the kidney. Each one was about the size of the little finger. They showed marked contraction where they passed through the growth extending from the cervix. Dr. Ramsay refers to a case reported by Heller (*Deutsch Archiv. für Klin. Med.*, Bd. V. Heft 2) in which there was a hydro-ureter and hydronephrosis of one portion of a double ureter and double pelvis, the dilated ureter ending as a closed sac in the wall of the bladder. A similar case by Weigert (*Irish*.

Archiv., No. 70, p. 490) is also alluded to. Debrine and others have described the condition of reduplication of the ureter, but find it rare. Dr. Elizabeth Bundy, of the Woman's Medical College of Pennsylvania, who has for twelve years directed the work of the dissecting room, has seen but one case of double ureter in that time.

Dr. Frances Van Gasken tells me of a similar case at an autopsy held at the Philadelphia Hospital some years ago.

Case II. was one of splenectomy for a prolapsed spleen which had undergone fibroid degeneration. The case is remarkable because of the perfect clinical history which it offered for an ectopic gestation.

The patient, C. E., was an Irishwoman, forty-one years of age. She had been married ten years, and had but one child about nine years of age. Two miscarriages had occurred since this birth, each at about six weeks' gestation. The patient came to my office about the middle of March, 1897. She had menstruated regularly up to the November preceding. In December she missed her period. On January 17 she had a slight show of blood, and again on February 26, when she had severe colicky pains and passed what she described as "a piece of skin," and her physician who accompanied her to my office said he thought was a cast of the uterus.

On March 15 she again had severe pain, accompanied by a discharge of blood and was confined to bed for two days. The patient thought herself pregnant. Said she had noticed some enlargement of the breasts since January. Colostrum was expressed from the nipples on pressure. The patient was very nervous and apprehensive—almost melancholy.

Upon palpation over the abdomen, a mass of doughy consistency was appreciated just above the pubic symphysis to the left of the median line. By pelvic examination the mass was found to project into the pelvic cavity and crowd the uterus backwards. Bimanual palpation showed that different portions of the mass varied in consistency, there being a portion which was most dependent, and which was as hard as cartilage or bone, while the rest of the mass was soft.

On April 3 I operated upon the case, fully expecting to find a gestation sac and probably a foetus. After separating the omentum, which was adherent to the tumor and at the pelvic brim, I discovered a dark, bluish-purple tumor containing throughout a por-

tion of its substance an indurated area of ivory whiteness. The mass was quite easily lifted from its bed, lying as it did partly in the left iliac fossa and extending downward into the pelvic cavity. It was attached by a very long vascular pedicle to the upper left side of the abdomen. On further examination this tumor was found to be a wandering spleen. The pedicle was twisted and the greatly enlarged vessels in it contained thrombi. After ligation of the pedicle, which required considerable care because of its vascularity, the removal of the tumor was an easy matter. The patient's convalescence was entirely uncomplicated. Her extreme apprehensiveness continued for about three months after the operation, after which she reported herself as vastly improved, and feeling better than she had for years. As we never suspected the tumor in her case to be a prolapsed spleen, her blood was not examined prior to operation. My own impression, however, concerning the case is that the enlargement was primarily the result of malarial hypertrophy, and that the fibroid degeneration resulted from the changes in circulation induced by the disease as well as by the position of the organ.

Acting upon the supposition that the condition was malarial, I placed the patient upon treatment with quinine and arsenic, and her general condition was thus much improved. My reason for considering the condition malarial was the fact that I found the patient had been living for thirty years at 108 Drinker street, a small alley running between Arch and Race and Front and Second streets in this city, where the conditions are anything but hygienic, and where I found others in the neighborhood constantly suffered from malarial fever. I made several efforts to have the patient's blood examined for malarial organisms before putting her upon this treatment, but without success.

This week an examination of the blood was made for me by Dr. Frances C. Van Gasken, who reported the number of red blood cells as 4,025,000, hæmaglobin 78 per cent. and no malarial organisms present. There was no marked change in the number or appearance of the leucocytes. Dr. Marie K. Formad, the pathologist of the Woman's Hospital made the examination of the tumor for me, taking a section from the dense cartilaginous structure found at the hilum of the spleen.

On August 10, 1890, I made an exploratory abdominal incision

in the case of a child eight years of age, whose abdomen was distended by an immense splenic tumor which seemed to fill the entire cavity. The child was in a very weak, emaciated condition, and the parents unwilling for any extreme measures for her relief, therefore the incision was closed and healed promptly. In this case, also, the patient came from a malarious region, although there was a history of tuberculosis in the family. This child was placed on antimalarial treatment also, and improved in general health while under observation, but I soon lost sight of her.

At an autopsy performed at the Woman's Hospital in 1893, following an operation done for strangulated hernia, an enlarged prolapsed spleen, weighing eleven pounds, was found occupying the *right* iliac region and crowded down into the pelvis. Here also there was a twisted pedicle, with the history of severe paroxysmal pain. Dr. Roberts reported this case in the "American Journal of the Medical Sciences" for December, 1894.

In the case in which I did splenectomy I believe that the organ had been functionally inactive for some time, and that twisting of the pedicle caused symptoms like those occurring when the pedicle of an ovarian cyst is twisted. It was these severe paroxysmal pains that confirmed the supposition of a threatened rupture of tubal pregnancy. The rapid increase in size of the mass, appreciated both by the patient and her physician, was probably also induced by the excessive congestion resulting from twisting of the pedicle.

Among the reported cases I do not find any answering exactly in description to my own case. Simple and malarial hypertrophy, abscess, simple and echinococcus cysts, sarcoma, syphilis and even tuberculosis of the spleen have been reported, but I find no case of fibroid spleen—that is, when there was so marked a localized change in structure as found in this specimen.

Dr. James P. Warbasse, of Brooklyn, who has studied the ancient and modern literature of the spleen most exhaustively, concludes that the leucæmic spleen is absolutely not suitable for operation when the blood-cell ratio is 1 to 50 or worse. He has collected and reported statistics concerning 124 cases of laparo-splenectomy.

Among this number sixty-three died as a result of the operation and sixty-one recovered. Five more died in a short time either from the operation or from a continuation of the disease. This gives a mortality of 54.8 per cent. Warbasse states that there are

on record thirty cases of laparo-splenectomy in which investigation of the blood has been made after operation. Nineteen of these are of especial value because in these an exact record of the condition of the blood was made both before and after removal of the spleen. After the operation, in a large number of these cases, there was a rapid increase in the number of white blood cells and a diminution in the number of red cells. Zessas and Vulpus made experiments upon healthy animals and found that splenectomy is followed by a rapid increase of more than 100 per cent. in the number of leucocytes within nineteen days after operation. From this high point the number gradually sank till it reached normal on the sixty-fifth day. The number of red cells diminishes 20 per cent. during the first nine days and then gradually increased to normal. J. M. Neel, of Bonham, Texas, reports two cases of successful splenectomy, and outlines the indications and contra-indications, as follows: It is unjustifiable in leucocythemia or when the lymphatic glands are involved, but indicated in tumors, simple hypertrophies or when there are pressure symptoms, causing loss or suppressed function of any other organ, severe paroxysms of pain, or when it is proven rebellious to simple measures and attended with dangerous or serious disability. In movable or displaced spleen requiring interference, he thinks extirpation is preferable to operative fixation. Rydzier, of Krakow, reports in the *Centralblatt. für Chirurgie*, July, 1895, an operation for fixation of a movable spleen performed by himself as follows: He made an incision in the median line of the abdomen and dissected up the peritonæum at the level of the eleventh and twelfth ribs, making a pocket in which he lodged and fixed the spleen and passed the fixation sutures through the gastro-splenic ligament. Up to the time of his report, made three months after the operation, the spleen had remained in place. Another method of fixation described by Plücker, of Cologne and practiced by Bardenheuer fixed the spleen outside the peritonæal cavity in the loose, fatty and connective tissue, just under the diaphragm, the spleen being pushed into the bed prepared for it by a small opening in the parietal peritonæum. The latter is sutured to the serous covering of the pedicle and the communication with the peritonæal cavity thus shut off. The spleen is fixed by threads passed around the tenth rib and through the lower end of the viscus. Sutures may also be used to secure it to the detached fascia and connective tis-

sue below it. Kouwer (*Wciner Klinische Wochenschrift*) reports two cases in which he fixed the spleen by a lumbar wound.

The question of fixation did not arise with reference to the management of my case, as the organ was so manifestly diseased.*

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AMENORRHŒA.†

BY E. L'H. MCGINNIS, M.D., NEW YORK.

In the selection of my subject for consideration this evening, I realize that many consider it but a symptom rather than a definite pathological condition; and yet, as many of our best known text-books make separate chapters of it and its treatment, and also because we are often consulted for relief from the so-called symptom, I am led to believe that you will pardon me for my choice.

In all the field of gynæcology there are few conditions more annoying to its victims or more obstinate to successfully treat than amenorrhœa, and, in its exaggerated form, entire absence of the menstrual flow. It is a condition that nearly every woman suffers from more or less at some time during puberty, for so delicate is the adjustment of the female pelvic organs that but little disarrangement in any part of the wonderful machine is required to upset its perfect working, and this is very often shown by a delayed or absent catamenial discharge.

Among its many causes are: Pregnancy, shock (mental or physical, including grief, joy, etc.), illness of different kinds, but more especially the wasting diseases, exposure to cold, lack of exercise, vicarious flux of blood from other organs, rudimentary development of ovaries or uterus, stenosis of uterine canal or vagina, imperforate hymen, atrophy and cystic degeneration of one or both ovaries. It is hardly necessary to more than mention that in cases of absence of uterus, ovaries or tubes there can be no true menstrua-

* For the references concerning the surgery and physiology of the spleen, I am indebted to Sajous' *Annual of the Universal Medical Sciences* (issue of 1896).

† Read before the New York Obstetrical Society, October 19, 1897.

tion, though we are, of course, familiar with the appearance of a bloody discharge occasionally, following the removal of ovaries or tubes, especially if one or more fibroid growths are present in the uterus.

There is an idea that women of the blonde type and those tending toward obesity have much less flow than others, but in my experience I have found little if any difference in this respect.

In regard to the treatment of the different causes, pregnancy being a physiological condition, naturally calls for none; little can be done in cases where amenorrhœa is due to emotions, fear, etc.; and with illness of a wasting character general treatment for it will often relieve the amenorrhœa. Stenosis of the uterine canal may be successfully treated by either electricity or surgery, and in cases of cystic degeneration of the ovary, operative procedure is, of course, called for.

There is another class of cases, however, with which we are all more or less familiar, where the brilliancy of modern abdominal surgery and the peerless skill of our surgeons count for naught. I refer to those women whose ovaries and uteri are infantile, and from arrest of development have refused to do the work for which they were intended. At first thought it would seem almost a waste of time and effort to treat them, and yet the fact remains that not only can much be done to help them, but that the undeveloped organs may be stimulated and encouraged to grow and do their work, provided the age of the patient be not too great. In young women of eighteen to thirty years old, where amenorrhœa is due to simple non-activity of the organs, relief is usually comparatively simple by means of tonics, hot douches and sitz-baths, sufficient nourishing food and exercise, with the proper use of electricity locally, the method of application depending upon the accessibility of electrodes to the pelvic organs per vaginam.

But we are sometimes confronted by a much more obstinate condition of affairs than simple functional non-activity, as is illustrated by the following case:

Mrs. J. F., English, twenty-nine years old, married five months and always ailing in this respect, was referred to my clinic at the Woman's Hospital. At sixteen she had noticed a discoloration of vaginal mucus one morning, supposed to be commencing menstruation; it did not reappear for some years, and then about the

same amount was noticed once, and again it was seen about eight months before she came to me. She complained of constant headache and backache, and on examination by the vagina, I found an undeveloped uterus about the size of an English walnut, soft and flabby; the ovaries could both be mapped out, and were about two-thirds of the normal size; the external genitals were nearly normal, and the breasts were exceedingly small and flat. She was most anxious for children, and came to the hospital for an opinion as to her chances of pregnancy. I am free to confess that I was somewhat sceptical as to my ability to help her, on account of her age (twenty-nine years), and explained her trouble to her, but she wished me to make the trial, so I accordingly introduced an intra-uterine electrode to the fundus (the uterine canal seemed to be nearly normal in calibre but very short), and to this I attached the negative wire of the *galvanic* battery, the positive being placed on the abdomen, my idea being to bring the blood to the uterus. This was continued for five minutes, and then followed by an application of the *faradic* current, both poles being connected with a bipolar intra-uterine electrode with the idea of creating uterine action. She bore the treatment well, though I had connected the cords to the coarse coil of the battery and increased the strength to her utmost tolerance. This was done thrice weekly, and at the end of the fifth week I was encouraged by seeing a slight discharge of blood from the vagina as she was on the table preparatory to being treated. Much encouraged, she returned home and on her next visit reported that the flow had lasted twenty-four hours. Twice more did it appear at intervals of several weeks, and the size of the uterus had certainly increased as well as the depth of the canal. I then received a note from her one day (some five weeks after the last flow), saying that her husband was ill (scarlet fever), and that she would have to nurse him, as they lived in the country (Bayonne, N. J.), consequently must discontinue treatment for a while. Three months after that I received another letter from her local physician, saying that he had been attending her through an attack of flooding, and asking if I thought it possible that she could have miscarried, as there were some large clots and membrane passed, and that he had given some to his brother (who was then working in the Carnegie Laboratory) for examination. I replied saying that I was extremely doubtful about her having been pregnant, though it

might be possible. A few days later I received another letter from him saying that unmistakable decidual membrane had been revealed by the microscope as well as other evidences of foetal tissues, and I have since heard that *some* flow lasting intermittently from two to three days made its appearance pretty regularly, and that the headache and backache had disappeared, and she was feeling better than ever before.

I have another case now under my care at the Vanderbilt Clinic, of a young woman, twenty-three years of age, who has a two-days' flow every six weeks instead of at from eight months to four years interval, as formerly, and the uterus and ovaries are both slowly but surely growing and acting as nature intended they should.

There are others of my cases of similar trouble that I have been able to do much for which I wish I might mention to-night, but I intend to speak again on this subject at some future time ere long.

In conclusion, let me earnestly hope that you will speak of any similar cases you may have seen and what you have been able to do for them; and if electricity will do for you what it has done for me in these conditions, surely it cannot be a waste of time and effort to employ it, as some would have us believe.

329 Amsterdam Avenue.

THE CHANGES IN THE UTERINE MUCOSA DURING
PREGNANCY AND IN THE ATTACHED
FŒTAL STRUCTURES.*

(Continued.)

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The Plane of Separation of the Ovum.

(Figs. 212 to 240.)

In this section I give the results of my studies of completely expelled ova at various periods of pregnancy, from the fifth week to full time.

Fifth to Eighth Week.

An examination of complete abortion-sacs at this period shows that usually the plane of separation takes place through the outer part both of the compact layer of the serotina and vera (between the middle and outer third of this layer). In parts, most of the compact layer, or, indeed, the whole of it may be shed; here and there small portions of the spongy layer may also be torn through. Very seldom is any extent of spongy layer separated. The surface of the expelled ovum, it is evident, varies considerably. Considerable portions of it are quite smooth; others rough and slightly shaggy.

Third to Fourth Month.

In specimens from this period the separation plane of the placenta is found to vary also, though for the most part, it is through the outer part of the compact layer of the serotina. Where this layer is very thin it may be entirely removed and some portion of the

* Read before the Royal Society of Edinburgh and awarded the first Research Prize of the Royal College of Physicians of Edinburgh in 1896.

spongy layer as well. But it is rare to find any large amount of spongy layer removed.

The membranes separate through the outer part of the compact layer. The plane is somewhat irregular. Generally only a thin layer is removed. The greatest thickness removed is found near the placenta.

Fifth to Seventh Month.

The plane of separation is still through the compact layer. Owing to the general diminution in the thickness of this portion, the amount of compact layer left behind in the uterus after the escape of the ovum is very thin, and one finds more frequently than in the earlier months that strips of the spongy layer are removed.

At Full Time.

The maternal surface of the expelled placenta is probably considerably more irregular than it is *in situ* before delivery. The alteration is, of course, due to the compression which it undergoes during delivery and to the escape of blood, both from the intervillous spaces as well as from the foetal vessels of the cord (*i. e.*, in cases where the cord is cut and not tied).

In frozen sections, the maternal surface always appears more regular than in the born placenta. This difference is also seen when a placenta is artificially removed from a uterus in the cadaver. It is not so irregular on the uterine surface as the naturally-born placenta.

An examination of the separation-plane of the born placenta shows that, between the depressions and fissures it is fairly smooth, though several rough patches may be found. This is owing to the fact that separation occurs mainly through the compact layer or through its junction with the spongy layer. Only here and there are any considerable portions of spongy layer removed. The amount of decidua removed varies considerably, however, not only owing to the differences in the site of the separation plane, but also to the variations in thickness both of the compact and spongy layers of the decidua at full time. It will be necessary, therefore, to recall in this connection what has been pointed out regarding the condition of the decidua at the end of pregnancy. In some parts no compact layer whatever is removed, simply because before labor it has been

entirely absorbed. In other parts no decidua of any kind may be removed, because it may have been so greatly thinned that the villi lay close to the muscular part of the wall.

It is very evident, therefore, that the view held by many, viz., that the placenta normally separates through the deep part of the spongy layer cannot be regarded as correct.

The separation plane of the membrane is also mainly through the compact layer. The amount removed varies greatly. In general it is very small, though often none is removed. Here and there bits of the spongy layer are torn off. The nearer the placenta the more decidua is found on the membranes. My observations are not in agreement with those of Langhans and Barbour, who state that the separation plane of the membranes occurs mainly through the spongy layer.

(According to Priestly and Leopold, artificial separation of the membranes causes the tearing to occur mainly through the spongy layer. This is what would be expected).

Placenta and Membranes in the Porro Uterus.

We are not yet in possession of descriptions of the microscopic appearances seen in the third stage of labor, *i. e.*, during the actual process of separation of placenta and membranes.

Of considerable interest are the conditions found in the uterus removed by Porro's operation. I have carefully studied one of these but can add nothing to the admirable account of the two specimens given by Barbour.

In all of these specimens the uterine body was retracted so as to closely embrace the placenta and membranes, but no separation had taken place. As regards the relation between placenta and serotina, it is interesting to note that both had considerably diminished as a result of the retraction. Associated with this change, there was a greatly diminished quantity of blood in the intervillous space, while the villi were closely packed together. These points are very distinctly seen when Porro sections are compared with those made from the normal full-time pregnant uterus. The great diminution in the size of the placenta which takes place during the third stage is made possible by the escape of the maternal blood of the intervillous space into the systemic circulation during retraction and contraction of the uterus, partly also by the forcing of the blood in the

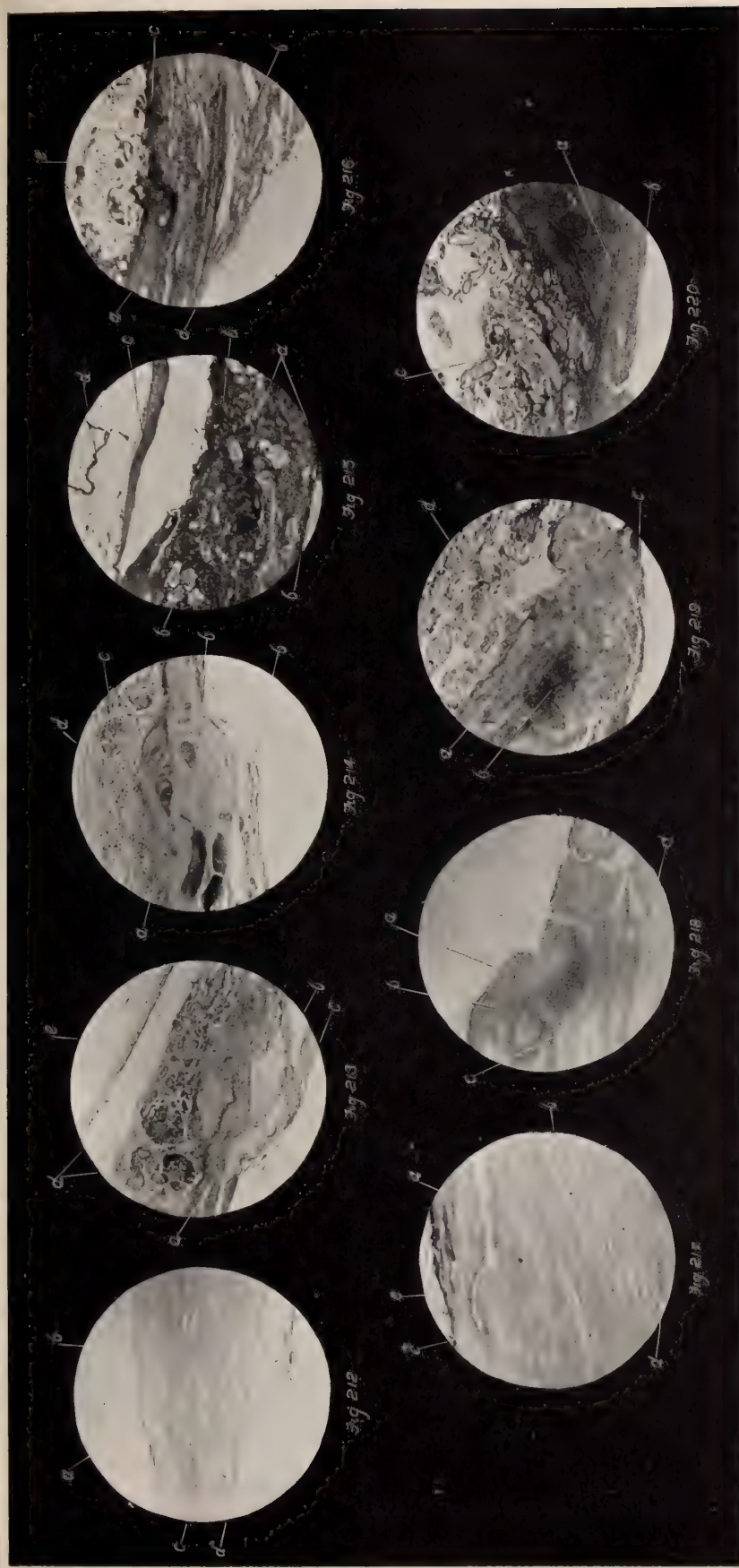


FIG. 212. SECTION FROM 4-WEEKS' ABORTION.

a, surface of vera; *b*, compact layer of vera; *c*, gland-space of upper part of spongy layer; *d*, separation-plane through junction of compact and spongy layers and through outer part of latter.

FIG. 213. ANOTHER FROM THE SAME.

a, compact layer of serotina; *b*, spongy layer; *c*, separation-plane; *d*, villi in maternal blood; *e*, amnion and chorion.

FIG. 214. ANOTHER FROM THE SAME.

a, compact layer of serotina; *b*, separation-plane; *c*, villi and blood in intervillous space; *d*, chorion.

FIG. 215. ANOTHER SECTION FROM 4-WEEKS' ABORTION.

a, serotina; *b*, villi and blood in intervillous space; *c*, separation-plane, through lower part of compact layer; *d*, amnion stripped off; *e*, chorion torn from villi.

FIG. 216. ANOTHER FROM THE SAME.

a, compact layer of serotina; *b*, space in spongy layer; *c*, hyaline degeneration; *d*, separation-plane through lower part of compact and through upper part of spongy layers; *e*, villi.

FIG. 217. ANOTHER FROM THE SAME.

a, reflexa; *b*, vera; *c*, junction of vera and reflexa; *d*, separation-plane of vera through lower part of compact layer; *e*, villi.

FIG. 218. ANOTHER FROM THE SAME.

a, surface of vera; *b*, compact layer; *c*, spongy layer; *d*, separation-plane through spongy layer.

FIG. 219. SECTION FROM 6-WEEKS' ABORTION.

a, compact layer of serotina; *b*, separation-plane through compact layer; *c*, villi.

FIG. 220. ANOTHER FROM THE SAME.

a, compact layer of serotina; *b*, separation-plane through compact layer; *c*, villi.

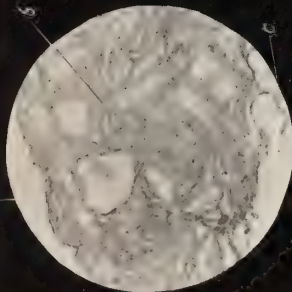


Fig. 221

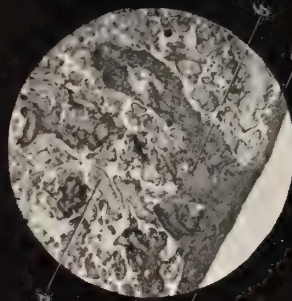


Fig. 222

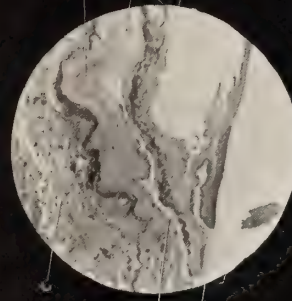


Fig. 223

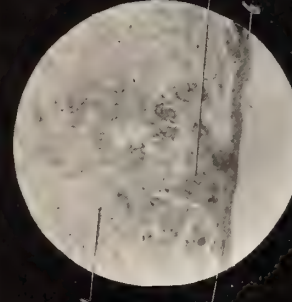


Fig. 224

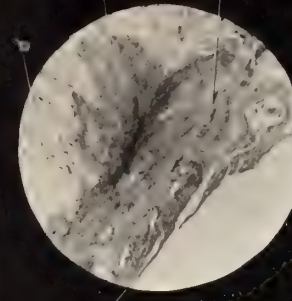


Fig. 225



Fig. 226

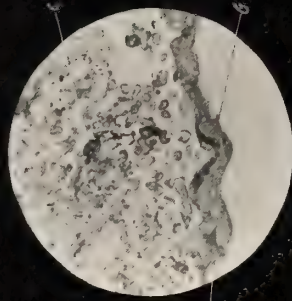


Fig. 227

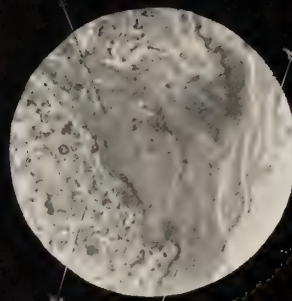


Fig. 228

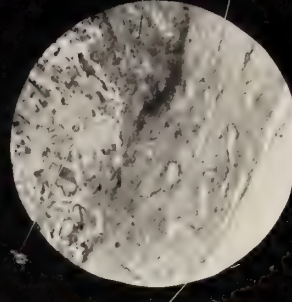


Fig. 229

FIG. 221. ANOTHER FROM THE SAME.
a, surface of vera; b, compact layer; c, separation-plane through junction of compact and spongy layers. X. 25.

FIG. 222. SECTION OF PLACENTA OF 4-MONTHS' COMPLETE ABORTION.
a, decidua serotina; b, decidua hillock; c, separation-plane through compact layer; d, villi. X. 25.

FIG. 223. ANOTHER FROM THE SAME.
a, chorion; b, amnion; c, villi; d, membranes turned back on placenta; e, separation-plane of membranes through superficial part of vera; f, amniotic surface of membranes. X. 25.

FIG. 224. ANOTHER SECTION FROM 4-MONTHS' COMPLETE ABORTION.
a, layers of serotina on placenta; b, separation-plane, through compact layer; c, decidua hillock; d, villi. X. 25.

FIG. 225. ANOTHER FROM THE SAME.
a, layer of serotina on placenta; b, decidua hillock; c, separation-plane through junction of compact and spongy layers; d, villi. X. 25.

FIG. 226. ANOTHER FROM THE SAME.
a, layer of serotina; b, decidua hillock; c, gland-space; d, separation-plane; e, villi. X. 25.

FIG. 228. ANOTHER FROM THE SAME.
a, compact layer of serotina; b, decidua hillock; c, villi; d, spongy layer; e, separation-plane through upper part of spongy layer. X. 25.

FIG. 229. ANOTHER FROM THE SAME.
a, compact layer of serotina; b, separation-plane through junction of compact and spongy layer of serotina; c, decidua hillock; d, villi. X. 25.

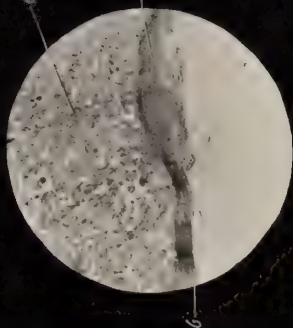


Fig. 230.

FIG. 230. SECTION THROUGH PLACENTA OF 6-MONTHS' MIS-CARRIAGE.
a, layer of serotina; b, separation-plane through lower part of compact layer and through junction of compact and spongy layers; c, villi. X. 25.

FIG. 231. ANOTHER FROM THE SAME.
a, layer of serotina; b, separation-plane; c, villi. X. 25.

FIG. 232. ANOTHER FROM THE SAME.
a, layer of serotina; b, spongy layer; c, separation-plane; d, villi. X. 25.

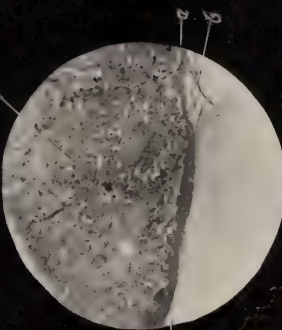


Fig. 231.

FIG. 232. ANOTHER FROM THE SAME.
a, layer of serotina; b, spongy layer; c, separation-plane; d, villi. X. 25.

FIG. 233. ANOTHER SECTION THROUGH 6-MONTHS' PLACENTA.
a, compact layer of serotina; b, separation-plane; c, villi of placenta; d, junction of placenta and membranes; e, decidua layer on membranes; X. 25.

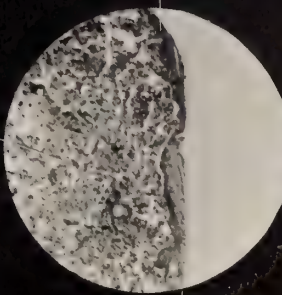


Fig. 232.

FIG. 233. SECTION FROM FULL-TIME PLACENTA.
a, layer of serotina on placenta; b, separation-plane of membranes through compact layer of decidua; c, chorion; d, degenerated villi of chorion laeve. X. 25.

FIG. 234. ANOTHER FROM SAME.
a, layer of serotina on placenta; b, separation-plane; c, separation-plane; scarcely any decidua layer exists; d, villi. X. 25.

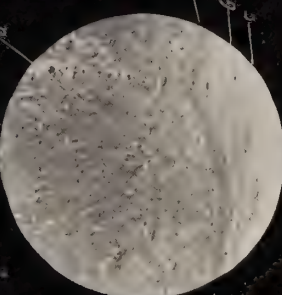


Fig. 233.

FIG. 235. SECTION FROM FULL-TIME PLACENTA.
a, layer of serotina on placenta; b, separation-plane through compact layer; c, villi. X. 25.

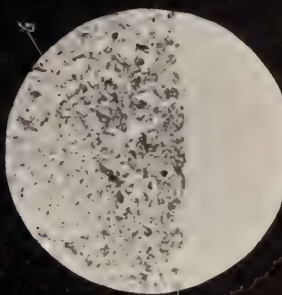


Fig. 234.

FIG. 236. ANOTHER FROM SAME.
a, separation-plane, no layer of serotina exists. It has probably been entirely absorbed at this part, or the villi had separated at surface. X. 25.

FIG. 237. ANOTHER FROM SAME.
a, compact layer of serotina; b, spongy layer; c, separation-plane through outer part of spongy layer; d, villi. X. 25.

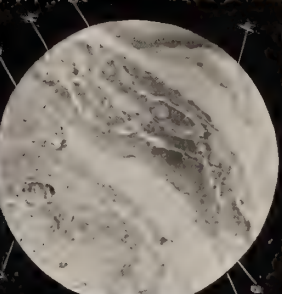


Fig. 235.

FIG. 236. ANOTHER FROM SAME.
a, separation-plane, no layer of serotina exists. It has probably been entirely absorbed at this part, or the villi had separated at surface. X. 25.

FIG. 237. ANOTHER FROM SAME.
a, compact layer of serotina; b, spongy layer; c, separation-plane through outer part of spongy layer; d, villi. X. 25.



Fig. 236.

FIG. 237. ANOTHER FROM SAME.
a, compact layer of serotina; b, spongy layer; c, separation-plane through outer part of spongy layer; d, villi. X. 25.

FIG. 238. ANOTHER FROM SAME.
a, compact layer of serotina; b, spongy layer; c, separation-plane through outer part of spongy layer; d, villi. X. 25.

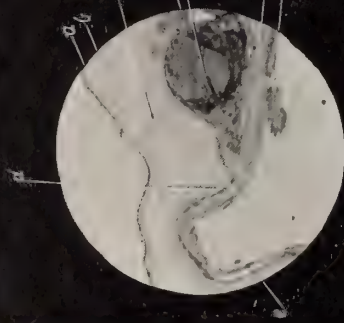


Fig. 238

FIG. 238. ANOTHER FROM SAME. *a*, amniotic epithelium; *b*, amniotic connective tissue; *c*, strands between amnion and chorion; *d*, chorion; *e*, serotina; *f*, separation-plane through compact layer; *g*, blood; *h*, villi. The junction of membranes and placenta is here shown. X. 25.

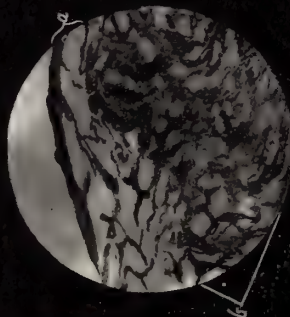


Fig. 239

FIG. 239. ANOTHER FROM SAME. *a*, layer of serotina; *b*, separation-plane; *c*, chorionic epithelium; *d*, chorionic connective tissue; *e*, amniotic connective tissue; *f*, amniotic epithelium. X. 25.

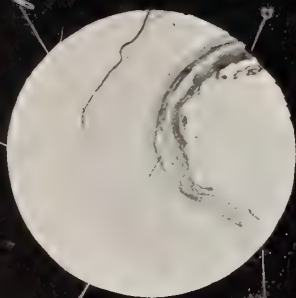


Fig. 240

FIG. 240. SECTION THROUGH FULL-TIME PLACENTA FROM PORRO'S OPERATION. *a*, compact serotinal layer; *b*, bit of spongy layer; *c*, separation-plane through the compact layer; *d*, separation-plane through the spongy layer; *e*, villi; *f*, decidual hillock. X. 25.

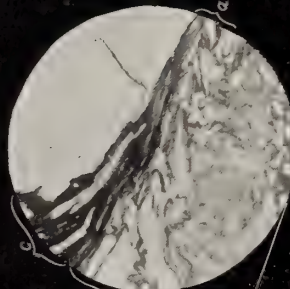


Fig. 241

FIG. 241. SECTION THROUGH INNER PART OF WALL OF FULL-TIME UTERUS IMMEDIATELY AFTER DELIVERY. *a*, remains of serotina, separation-plane has passed through outer part of decidua which has not been distinctly divided into compact and spongy layers; *b*, muscle of uterine wall. X. 25.

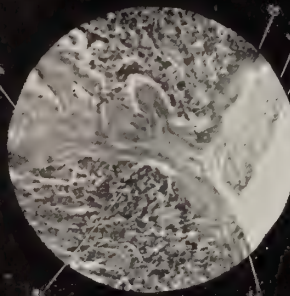


Fig. 242

a, strands of spongy layer, separation-plane, non-placental area; *b*, muscle of uterine wall. X. 25.

FIG. 242. ANOTHER SECTION FROM FIRST-DAY PUERPERAL UTERUS. PLACENTAL AREA. *a*, remains of serotina, separation-plane has passed through compact layer; *b*, muscle of uterine wall. X. 25.

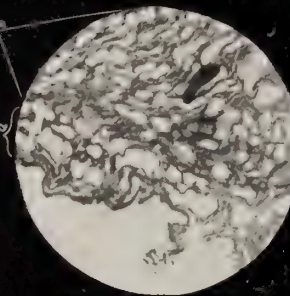


Fig. 243

FIG. 243. ANOTHER FROM SAME. *a*, remains of serotina, separation-plane has passed through compact

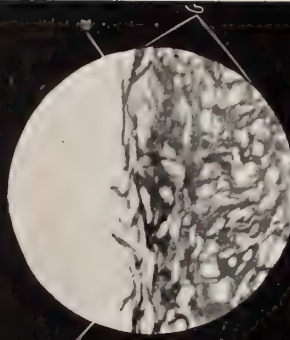


Fig. 244

layer; *b*, muscle of uterus; *c*, blood-clot lying on surface. X. 25.

FIG. 244. ANOTHER FROM SAME. *a*, remains of serotina, separation-plane is partly in compact and partly in spongy layer; *b*, muscle of uterus. X. 25.

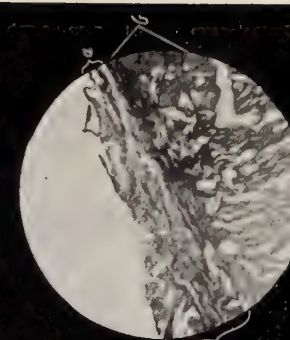


Fig. 245

FIG. 245. ANOTHER OF SAME. *a*, remains of serotina, separation-plane has passed through outer part of decidua which has not been distinctly divided into compact and spongy layers; *b*, muscle of uterine wall. X. 25.

FIG. 245. ANOTHER OF SAME. *a*, remains of serotina, separation-plane has passed through outer part of decidua which has not been distinctly divided into compact and spongy layers; *b*, muscle of uterine wall. X. 25.



Fig. 246.

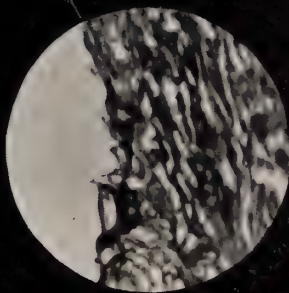


Fig. 247.

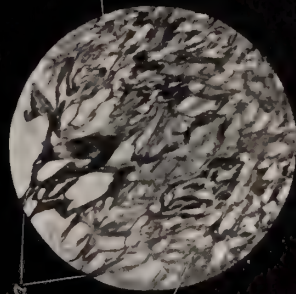


Fig. 248.

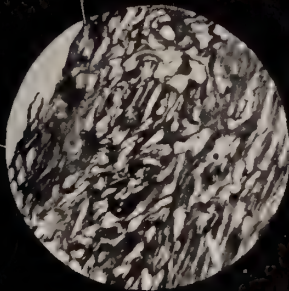


Fig. 249.

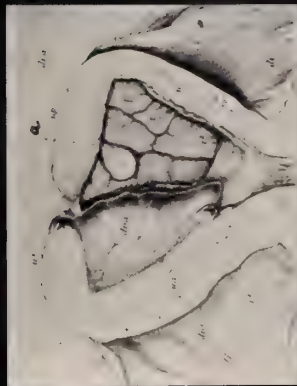


Fig. 250.



Fig. 251.



Fig. 252.

FIG. 246. ANOTHER OF SAME.

a, remains of serotina, separation-plane has evidently passed through outer part of spongy layer; *b*, muscle of uterus; *c*, blood-clot lying on surface.

FIG. 247. ANOTHER FROM SAME.

a, surface of muscle quite bared; no decidua is found on it.

FIG. 248. ANOTHER FROM SAME.

spongy layer of serotina; *b*, muscle.

FIG. 249. ANOTHER FROM SAME.

a, muscular part of uterus laid bare; no decidua seen; *b*, slight remains of spongy layer of decidua.

FIG. 250. REICHERT'S ILLUSTRATION OF THE INTERIOR OF THE UTERUS IN EARLY PREGNANCY, SUPPOSED BY HIM TO

a, encapsuled ovum; *d*, *u*, decidua vera.

FIG. 254. HUBRECHT'S DIAGRAM REPRESENTING EARLY RELATIONSHIPS OF OVUM IN HEDGEHOG.—THE OVUM IS IMBEDDED.

a, mucosa of uterus; *b*, hyperblast of ovum; *c*, thick proliferation of epiblast to form a trophoblastic knot;

ated epiblast; into these maternal blood finds its way; *e*, dilated vessels of decidua.

FIG. 255. ANOTHER DIAGRAM OF HUBRECHT, REPRESENTING THE CONDITION AT A MORE ADVANCED PERIOD OF PREGNANCY.

b, trophoblast layer; *h*, hypoblast; *s*, large space in the trophoblast; they

villi into the vessels of the cord and fœtus. The diminution of the serotina is possible because of the loose reticulated structure which forms the greatest portion of it at full time. Before labor begins the spaces are flattened more or less obliquely or parallel to the muscular layer of the uterus. During retraction they become somewhat crumpled and irregular; and, in parts, the serotina may appear, consequently, to have become somewhat more thickened.

In regard to the relation of the membranes, the main feature is the peculiar disposition of the decidua vera along with the closely attached chorion into a series of folds, along with a similar arrangement in the amnion, though the latter are entirely independent of the former, save where amnion and chorion are closely united. The foldings are not uniformly marked. They are narrower and more numerous in the amnion. The chorionic decidual folds vary according to the thickness of the spongy layer. Where this is scanty, very slight folding occurs. The independent arrangement of the amnion is made possible by the presence of delicate strands connecting the amniotic and chorionic connective tissue in such a large extent.

Post-Partum Uterus Immediately After Delivery.

At this period the decidua is arranged very differently from the condition in which it was found before labor. Owing to retraction and contraction, notwithstanding the amount removed along with the placenta and membranes, it is considerably thicker on the average. This is most marked in the placental area.

The surface of the placental area is irregular, being thrown into a series of irregular elevations and depressions, owing to the crumpling which has taken place. Its thickness is mainly made up of the strands of the spongy portion; remains of the compact layer exist as a thin layer at the surface. Though very spongy in nature the arrangement of spaces and trabeculæ is very different from that which existed in the preparturient condition. Then the spaces were mainly flattened parallel with the muscular wall of the uterus. In the post-partum condition the spaces are very irregular in size and shape and are no longer mainly parallel with the muscle. The vessels of the decidua are greatly contorted and compressed in many directions. In a considerable number of places the trabeculæ appear to have been torn across. All of these changes are consequent upon the retraction and contraction of the uterus.

In the non-placental area the decidua is thinner, but it is arranged in much the same manner.

In both areas may be found patches where the musculature is quite bare. These are either parts from which the decidua had been entirely absorbed by the end of pregnancy and which had not been entirely obliterated during the diminution in size of the uterus through retraction and contraction. Or the decidua had been very thin and had been removed along with the placenta or membranes.

Résumé.

My observations regarding the separation plane of the ovum may be summarized as follows:

In the early months of pregnancy when a complete abortion occurs not associated with any inflammatory changes in the uterus, the plane of separation of the ovum is mainly through the compact layer of the serotina and vera in its middle or outer layer; in certain parts the whole compact layer and bits of the spongy may be shed. It is exceptional to find any considerable quantity of the latter removed.

(In abnormal cases, *i. e.*, of incomplete abortion, the entire vera may be left behind, along with reflexal villi, the separation plane extending only through the outer layer of the serotina. In other cases parts only of the vera may be left. In other cases parts or the whole of the serotina may be left with a portion of the reflexa, along with attached villi. In other cases these irregularities may occur in combination.)

In later months, when a complete miscarriage occurs, the separation plane is, also, mainly through the compact layer; only here and there are the whole layer or parts of the spongy portion removed. (In abnormal cases, *i. e.*, in which the miscarriage is incomplete, large or small parts of the vera may be retained, along with varying quantities of chorion and amnion. Or a portion of the serotina may be left behind along with placental tissue. In some cases these irregularities may occur together.)

In the late months of pregnancy and at full time, the plane of separation is, also, mainly through the compact layer. But owing to the thinness of this layer, it happens more often than in the early months that separation takes place as well through the junction of compact and spongy layers or through the outer part of the latter. The thickness of that part of the compact layer found on the removed

placenta varies somewhat, because, as we have seen, in the prepar-turient condition considerable variations are found in the degree of development of the whole compact as well as of the spongy layer. (In incomplete deliveries the same irregularities are found as were described in the last paragraph.)

The body of the uterus, after complete delivery of the ovum has still attached to its inner surface the main thickness of the decidua tissue which was present before labor began, though it is completely rearranged owing to uterine retraction and contraction.

My observations, then, tend to confirm the statement of Friedländer, who, many years ago, stated that the plane of separation was usually found in the compact layer.

The credit of having first described the post-partum uterus as being lined by a layer of decidua probably belongs to Wm. Hunter. Cruveilhier, Heschl and others wrongly taught that the entire muscular wall was laid bare. I have already shown that this only takes place, in normal cases, to a very limited extent.

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EDITORIAL.

CO-OPERATION IN THE MEDICAL PROFESSION.

It seems strange in these days and in this country, when combination is universally the aim of every division of labor, when it represents a Winged Victory to some and a Juggernaut to others but a god to all—in these days of trusts, monopolies, trade-unions and political “machines”—it seems strange, we say, that in the medical profession alone, among associations of men, a spirit of disintegration rules and practical co-operation does not exist. It seems strange indeed and yet it is, as we should suspect, but the emancipated reaction against a monopoly—a medical “trust”—which lay heavily upon the profession less than a generation ago. Every man over fifty can remember when in all our cities a tiny clique of men controlled the entire practice and the fate of every young medical aspirant and that of every stranger lay absolutely in their hands. These arbiters were not necessarily very clever nor very learned but they understood the art of combination and every outsider had to fight hard and continuously for their favor before he received recog-

nition or patients. They are all long since dead and most of them are now but a memory to their former students but they did one great service to the profession which was that they made it respected and honored and gave to it, at that time and for many years afterwards, a social recognition and prominence which it will not probably attain again. For, as the members of this oligarchy died off and the profession increased with the growth of our cities and from immigration a reaction set in against the rule of the privileged few and, in the scramble for self-advancement, every man's hand was turned against his brother and respect even for ability was thrust aside when self-interest called for right of way. Suspicion took the place of confidence and envy that of admiration for deserved success. Physicians began to sneer at each other before their patients; they began to imitate the arts of small shop-keepers and to underbid and to undersell their brethren. Some even encouraged the well-to-do to accept medical charity in public institutions, shamefully regardless of the thousands of struggling doctors thus deprived of patients, merely that they might fill the maws of hospitals and clinics with pay-patients and thus hold their own places against other professional brethren eager to supplant them on any terms. What, then, has become of the *esprit de corps* of which we even yet boast loudly and do not cultivate? Do we not know and daily feel to our shame that, with our loss of mutual self-respect and confidence, the public also have lost almost the semblance of respect for us collectively? We constantly are the butt of the press and illustrated journals and even the lawyer and the stock-broker sneer at our "pretence" and our "money-grabbing propensity."

This is the effect, explicitly but not exaggeratedly expressed, of our reaction against the ideas and methods of the so-called "Old School," with its exactions and its tyranny. It was a natural and probably a necessary reaction but, like all radical rebellions, it has overleaped all bounds and has been carried by its own momentum towards self-destruction. We began by pulling down our tyrants, we have ended by falling to fight, each man his brother.

But our tyrants are dead, the "Old School" has passed away forever, the profession is emancipated, the oligarchy destroyed and the rule of the Great Mediocrity firmly established; whom, then, in our own ranks have we to fear? By our divisions and dissensions

we expose ourselves the prey of every combination of men, yet we continue fighting, blindly and ruthlessly, both friend and foe. Why do we not end this senseless suicidal policy and combine for our protection and our common interest? Our utter weakness and want of cohesion are apparent to all men. Our press, our literature, the manufacture of our instruments and our drugs, even the making of laws which affect our interests vitally are practically in the hands of outsiders and are dominated by influences beyond our control. Do we need proof of the contempt and indifference in which we are held, as a profession, by our State authorities, whose flexible knees are quick enough to bend before all other representative bodies of our fellow-citizens? Then let us call to mind the action last year of the Governor and Legislature of Missouri, who discriminated against the profession in favor of quacks, and the more recent example of our own Governor who, in spite of the fact that half the population of this city last year accepted medical charity and in the face of the protest of an overwhelming majority of New York physicians, vetoed an excellent, efficient and most just bill for our protection.

Surely the time is ripe to unite for our common good and to make our influence felt, as a body, in the community. Let us borrow from the experience and wisdom of laymen and *combine*. And how shall we begin? The answer is plain. Let us forthwith take an interest in all that which is working in our interests. Let us support with enthusiasm our medical press, giving the preference always and active encouragement to those journals *which are owned and controlled by medical men*. We know that the former *must* work only in our interests, that they are ably edited and that they look only to us for their support. There are now many of these journals scattered throughout the country, their medical editors and proprietors bravely struggling for the establishment of a true medical press—one that shall faithfully reflect medical opinion, shall labor unceasingly for the advancement, honor and influence of our profession, shall be the vigilant guardians of its interests and, in time of danger, shall speak for us in a loud and resonant voice whose authority and might shall be convincing in the preservation of our rights. This is the principle for which a number of devoted physicians are working. They have taken up medical journalism, as their own masters, that they may establish firmly in this country

at least a medical press entirely under the control of medical men. They are fighting your battle, O Medical Reader, with enduring courage and many rebuffs, against the immense competition of journals actually in the pay of drug houses on one hand and of those supported by the lay publishers on the other, who use them as an advertising medium for their medical books. Is it an *esprit de corps* or is it selfish indifference and an unthinking willingness to get their money's worth, from whatever source or at whatever cost, which actuate the majority of the profession still to encourage both of the above classes of trade journals in preference to those which ask this support by every argument which appeals to both the reason and the conscience of medical men? Merely as a matter of self-interest, then, if a less unselfish motive cannot affect us, let us encourage the development of our *own medical press*.

The same arguments apply with force to another branch of our medical literature. Why is the publication of medical books not under our control? Can any other class of men be so anxious for the dissemination of good medical literature as we ourselves? To whose interest is it to encourage literature and whose judgment is so competent to decide upon its worth to science as that of physicians themselves? Is it that we doubt our own ability, learning and judgment or do we fear that envy and small-mindedness would prejudice the decisions of medical judges, if the publication of our literature were entirely submitted to the latter's control? Publication houses should be established by medical men and the profession, by sending to these establishments their books for publication, should encourage this co-operative principle. Thus would be furnished the means for better work and more thorough advertising than are possessed by lay publishing houses, to whom we must now sue for permission to present our experience and our ideas to the medical public. It would not be necessary that the business details of publication should be carried out personally by medical men but the publication of medical books should be under the control of medical men instead of the reverse condition, which gives the control of the medical literature to lay publishers. When actual *scientific value* becomes the standard for the acceptance or rejection of a medical manuscript, instead of the standard which prevails among lay publishers, namely, the supposed *selling value*, we will have better books and cheaper books and the profits instead of enriching out-

siders, who now live by us, will come back to medical men. Thus we will assist our own. It is not a question whether lay publishers have not greater facilities for this work than physicians could have. These facilities are made by our support; if we transfer our support from lay publishing houses to our own publishing houses the facilities will go with it. There are a few such publishing houses in existence to-day, among which the Medical Gazette Publishing Company of Cleveland, O., is conspicuous. This company is mainly composed of medical men and is absolutely controlled by them. This fact should assure it the patronage of the profession. We have no personal interest whatsoever in this Company and will never have but we recognize it as a pioneer in the field of co-operation in medical literature and we earnestly bespeak for it the encouragement of the profession, that it may succeed and do good work, for the sake of the principle we have enunciated. There should be not one successful publishing company in Ohio under medical control but there should be one or more in every State in the Union.

In regard to the manufacture of medical drugs and medical instruments, the necessity of co-operation is especially important. These manufacturers depend absolutely upon the profession for their existence and make their profits by our aid. It is but just, therefore, to demand that they appreciate this fact and that they do not requite us by picking our pockets. When such firms advertise and sell their wares directly to the public, they enable the latter to buy without obtaining a doctor's prescription and thus rob us of our fees. Could they do this if we would unite and co-operate for our own protection, if we would order by prescription only from those firms who refuse to sell directly to the public?

We claim to be more intelligent and better educated than our fellow-citizens. Let us prove at least our equality in the matter of these endowments by recognizing our common interests and by protecting them. We boast of our *esprit de corps*, then let us drop the methods of the Stock Exchange and recognize our mutual dependence and relationship in a common aim and for a common good. Let us *unite*. Let us *co-operate*.

THE THERAPEUTIC FORUM.

We again call the attention of our readers to this Department of the JOURNAL. It has been established in the interest of the subscriber that he may be provided with an honest and reliable *critique* of the drugs and the instruments which he may desire to purchase. Here again do we apply the scheme of medical co-operation, which we shall continue strenuously to urge upon the profession, and we throw these columns open to practitioners and solicit their independent criticism of all drugs and other therapeutic agents which appeal to their patronage. It has been impossible hitherto that any physician should obtain an opinion upon the value of any new preparation except by the desultory method of discussing it with some chance acquaintance who may have chanced to experiment with it.

Every physician has been inundated with testimonials in pamphlet form rehearsing the immense value of new pharmaceutical preparations. But the benefit of this method is doubtful because every intelligent practitioner, knowing they are sent by the manufacturer, is apt to doubt either the disinterestedness of the testimonials or the genuineness of the well-known names attached to them. We have established a means by which physicians can communicate their experiences directly in an ethical manner and one which will place them above the possibility of adverse criticism or the reproach of self-interest. We are personally and editorially responsible for every word which enters the Therapeutic Forum and we have no fear that we shall ever be accused of lukewarmness in the defence of the honor of the profession or of lack of appreciation of its ethics.

We, therefore, ask all our medical subscribers to write us their experiences with any reputable drug or surgical instrument which they have used in a scientific way and we ask them to do this whether their judgment thus formed has been favorable or the reverse. We do not wish fulsome praises of any therapeutic agent—the manufacturer can supply that—but we do wish and earnestly solicit clinical facts from reputable physicians concerning its use. If the consensus of medical opinion is to the effect that any preparation or other agent is of therapeutic value, it is to the advantage of the profession that this fact should be brought to our attention in a reliable and ethical manner. If, on the other hand, the clinical ex-

perience of independent witnesses show that an agent is not what its manufacturers believe and claim that it is, it is of the utmost importance to our patients and to us that we should know the facts. When a physician writes an original article in praise of any proprietary agent and publishes it in the reading columns of a medical journal, he at once lays himself open, justly or unjustly, to the suspicion of having received a *quid pro quo* from the manufacturers. But in the Therapeutic Forum the case is altogether different. Not only is this JOURNAL and all it contains copy-righted but we assume, as we have said, the responsibility for whatever appears in this Department and we will not receive any favorable testimony of whose independence and disinterestedness we have not assured ourselves.

When, therefore, we ask our readers to send us their testimony we can frankly ask it in the name of our fellow-practitioners, reminding them that as members of the same profession we do not work each man for himself alone and that it is our duty and our privilege to consider and to help each other.

THE HAND OF GOOD FELLOWSHIP.

We welcome into the journalistic arena two recent competitors and co-workers, *The Georgia Journal of Medicine and Surgery* and *The Western Medical and Surgical Gazette*. Both these Journals are owned and edited by medical men and we welcome them again, for this reason, as brothers-in-arms in a good cause. They represent, as we do, the principle of a free medical press controlled by medical men, and we heartily wish them many subscribers and a large field of usefulness. In general appearance, in the arrangement of matter and its scope and in typographical work they are excellent, while the scientific interest of their original articles and other contributions, judging from the single numbers before us, entitle them to the appreciative support of the profession at large and of their respective sections of this country in particular.

CORRESPONDENCE.

Excessive Mobility of the Uterus.

NEW YORK, Oct. 30, 1897.

To the Editor of the American Gynecological and Obstetrical Journal:

SIR: In my article on "Excessive Mobility of the Uterus," published in the September (1897) number of your journal, occurs a statement which requires modification. The statement in question reads: "In the discussion on retrodeviations of the uterus, at Geneva, in September, 1896, Pozzi alluded to this condition, and in a subsequent private conversation with the writer expressed his belief that this was probably the first occasion on which the right name had been used to designate it."

Dr. W. O. McDonald, of this city, kindly called my attention to the fact that the subject was presented by Schroeder in Ziemssen's *Cyclopædia*, Vol. X., p. 186.

On referring to Ziemssen's *Cyclop.*, German edition, Vol. X., p. 177, I find an article by Schroeder entitled "Excessive Beweglichkeit des Uterus." In it Schroeder describes the condition fully, his observations agreeing in every main particular with my own as detailed in the article above alluded to. He advocates treatment by pessary, which he had found eminently satisfactory. The resource of shortening the round ligaments, applicable to patients who do not care to wear a pessary, was unknown at the time Schroeder wrote.

The only other allusion to the subject which I can find is in Veit's *Handbuch der Gynækologie*, 1807, in which Kuestner describes the condition under the heading, "Abnorme Beweglichkeit des Uterus." In his "Grundzuege der Gynækologie," published in 1893, however, Kuestner makes no mention of excessive or abnormal mobility of the uterus.

The following works, all of which have appeared *since* the publication of Schroeder's article, contain absolutely no allusion to excessive mobility of the uterus, either in the table of contents or in the index:

- MUNDÉ: "Minor Surgical Gynæcology," 1885.
 MARTIN: "Frauenkrankheiten," 1887.
 "Cyclop. of Obst. and Gyn." Edited by Grandin, 1887.
 "American System of Gynæcology." Edited by Mann, 1888.
 TAIT: "Diseases of Women and Abdominal Surgery," 1889.
 SKENE: "Diseases of Women," 1889.
 THOMAS AND MUNDÉ: "Diseases of Women," 1891.
 POZZI: "Traité de Gynécologie," 1892.
 "Reference Handbook of the Medical Sciences." Edited by Buck, 1889. Supplement, 1893.
 "American Text-Book of Gynæcology." Edited by Baldy, 1894.
 GARRIGUES: "Diseases of Women," 1894.
 GREIG SMITH: "Abdominal Surgery," 1896.
 "System of Medicine, Vol. II., a System of Gynæcology." Edited by Allbutt and Playfair, 1896.
 JONES: "Diseases of Women," 1897.
 HEGAR-KALTENBACH: "Operative Gynækologie," 1897.
 SUTTEN AND GILES: "Diseases of Women," 1897.
 PENROSE: "Diseases of Women," 1897.
 SCHAEFFER: "Essentials of Gynæcology," 1897.

With a fairly extensive acquaintance with the current gynæcological literature of the past ten years, I fail to recall having met therein with any description of excessive mobility of the uterus as a distinct pathological entity worthy of consideration and treatment. The last three volumes of Frommel's *Jahresbericht ueber die Fortschritte auf dem Gebiete der Geburtshilfe und Gynækologie* contain no allusion to the subject.

I find in the facts above stated, as well as in the practical importance of recognizing the condition when present, sufficient indication and justification for again calling attention to excessive mobility of the uterus and for claiming for it restoration to its proper place in the text-books and the literature of gynæcology.

GEORGE M. EDEBOHLS, M.D.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL
SOCIETY.

Stated Meeting, October 5, 1897.

The President, R. A. MURRAY, M.D., in the Chair.

Uterine Hæmorrhage after the Menopause.

THE PRESIDENT: During the past week I have seen three patients which have forcibly brought to my mind the necessity of making a correct diagnosis in cases where there is hæmorrhage from the uterus after the menopause. Two of the women were unmarried. The first patient was a single woman, forty-four years of age, in whom the menses have been suspended for two years. For some time she has had attacks of bleeding which come on without any periodicity while she is performing her daily duties or after lifting a heavy weight. At first the discharge was leucorrhœal, but it soon became bloody, and when I saw her the other day she had been bleeding continuously for three weeks. When this flow first began she consulted a physician, who made no vaginal examination, but told her it was due to "the change of life," and two weeks before I saw her she consulted another who also made no examination and told her the same thing. I examined by the rectum at once, and found the uterus large and distinctly felt something protruding from the cervix. Moreover, the uterus was so fixed in the pelvis by an exudate that it was absolutely immovable. Examining *per vaginam*, I found the cervix enlarged to the size of a silver dollar, and, protruding from it, a large fungoid growth, very friable and bleeding freely to the touch. There was a ring of firm, indurated, unbroken tissue surrounding this cauliflower growth. I made a diagnosis of malignant disease, which has since been confirmed by the microscope. There was no family history of cancer.

The second case was that of an unmarried woman of forty-eight, who had passed the menopause at the age of forty-two, and who suffered from a bloody leucorrhœa, which was at times very profuse. She had been stout but had lost flesh and presented a cachectic ap-

pearance, which at once suggested malignant disease. Upon examination, however, a granular condition of the vagina was revealed, and, upon passing a small dull curette into the uterus, I found that the lining membrane of that organ was covered with fungous granulations. I curetted the uterus and was surprised to find the cavity filled with more than a pint of very foul-smelling pus. The uterus was washed out and packed with gauze. The improvement in her condition was remarkable. Her fever left her at once, and for the first time in years she had a good appetite. This case strongly suggested malignant disease, and yet the microscopical examination showed the condition to be nothing but fungoid endometritis, and pyometria—the pus retained by the fungoid growths.

The third patient was a married woman. This also was a case of fungoid endometritis, and there was besides a large patulous os, bilateral laceration of the cervix and a lacerated perinæum. Cystocele was marked and an enormous rectocele, which became turgid when the woman stood upon her feet, projected from the vulva. She was fifty-two years of age, had ceased to menstruate at forty-two, and the trouble dated from a miscarriage which occurred four years before the menopause. In this case also there was quite a profuse flow of pus from the uterine cavity when I curetted it, and the patient was cachectic, as in the preceding case.

The first case is interesting in showing the importance of making a vaginal examination in all cases in which bleeding occurs after the menopause. If the woman is unmarried a diagnosis can often be made by examining *per rectum*, followed by a vaginal examination when its necessity is shown. The two other cases are noteworthy in that they demonstrate the fact that hæmorrhage after the menopause is not always due to malignant disease, which is what the text-books tell us to look for at that time of life, but may be caused by a peculiar form of senile fungoid endometritis. It should be remembered, too, that as a rule malignant disease does not occur in women who have not borne children.

Dr. EGBERT H. GRANDIN: How do you account for the collection of pus in the uterine cavity?

THE PRESIDENT: I suppose an abscess must have formed there. The internal os was occluded by the granulations, and there was also a slight degree of flexion, both of which would prevent the escape of the pus.

I would also like to mention two cases of uterine polypus which I saw recently with Dr. Collyer. Both were women past the menopause, and between fifty and sixty years old. One was married and the other was single. Both suffered from hæmorrhage, and a provisional diagnosis of malignant disease had been made in each case because it was thought that nothing else but cancer could cause hæmorrhage after the menopause. Both patients ceased bleeding after the polypi were removed and the uterus curetted.

Some Remarks on the Use of the Hand in Obstetrics.

BY MALCOLM McLEAN, M.D.

(See page 650.)

DISCUSSION.

Dr. J. RIDDLE GOFFE: I am not so well informed in detail as to the special use of the hand in obstetric work as many others who are here to-night, but it has been apparent to me for some time, and a point upon which I have insisted, that the less instrumentation a man makes use of, whether in surgery or in obstetrics, the better it is for the part he manipulates. I believe this is a good principle to follow. The only objection to the use of the hand in the parturient canal is the fact that it is not so easily or so perfectly rendered aseptic as an instrument. The author is wise in emphasizing the importance of thorough cleansing of the hand. It is a thing which has to be attended to scientifically, and the more time spent in doing it the more perfectly will it be done.

Dr. SIMON MARX: The paper is to the point and hits from the shoulder. I am sorry the author did not touch upon the question of examining the parturient woman. There are some men who fear to put their finger in a parturient woman's vagina. A man who is afraid to do this is one who ought not to be allowed to practice obstetrics. We never see a laparotomist who is afraid to introduce his hand in the abdomen, even when it is invaded by a pathological process, and in spite of the fact that the peritonæal cavity is much more susceptible to infection than the vagina. I take pleasure in stating that I examine as much as possible and sometimes sit for half an hour with my finger in the vagina for one purpose or

another. There are some men who call themselves "abdominal palpationists," who claim that they can make the diagnosis of position and presentation by palpation alone. I admit they can in most cases, because the position and presentation of the foetus is normal in ninety-five per cent. of all the cases; but are their results by these measures any better than ours? Leopold, for instance, employs this method in all cases, yet his mortality goes right on about the same. In a town in Saxony, I believe, a law has been passed making it obligatory for midwives to examine by the rectum alone. Is not this a paradox? She examines by the rectum, and her fingers, laden with germs, come in contact with the vagina, and so infect the woman!

To go further, of what value is the pelvimeter? Can it not be superseded by the hand? Pathological conditions within the pelvis can be more readily recognized by the hand. The importance of any deformity of the pelvis depends upon whether the head of the child will pass through it. If it will permit the head to engage, no matter what degree of deformity, then that head will pass. I have seen a case where the true diameter of the pelvis was three inches, and yet I was able to get the head to engage, and delivered with axis traction a living child weighing eleven pounds.

I had hoped that the author would take up the question of manual dilatation of the os, for I want to know whether he thinks it a safe procedure. During the past two years I have depended upon the hand for dilating purposes for the induction of labor, and in fifty cases, for conservative reasons, I have successfully delivered forty-seven women of fifty-three babies, losing only one child. This is a result not to be expected, either after the use of the catheter or Barnes' bags. Of this number, thirteen were cases of uræmia, two women being lost, but no children; ten were cases of placenta prævia and no mother or child was lost. In one case, where the mother was dying of scarlet fever, I did a perforation delivery because the child was practically dead. There was no sepsis in any case.

Manual dilatation is dangerous only in the hands of a man who does not know what he is about. The same may be said of the use of instruments. Almost without exception, my cases were seen in consultation, and can be verified at any time.

Dr. A. BROTHERS: For the purpose of assisting labor there is

no question of the value of the hand over instruments, for if the hand is aseptic it offers the best chances for both mother and child. But when it comes to the use of the hand for purposes of diagnosis, I am not so fully in accord with the author. The tendency nowadays is to avoid making prolonged examinations while the woman is in labor, and statistics prove that by following this principle the mortality of the puerperal period has been reduced. Of course, this applies to hospital and tenement-house practice—not perhaps to the practice of the members of this Society. I believe that the less we examine the parturient woman in normal labor the better. I make a first examination, using only my fingers; if labor is progressing normally, especially if the patient is a multipara, I do not see the necessity of using the whole hand in making a diagnosis. If I were a primipara I would be very grateful to my *accoucheur* if he would use only one or two fingers. Of course, if there is reason to suspect any disproportion between the size of the pelvis and that of the child, it is necessary to introduce the whole hand even if it has to be done under narcosis.

Dr. EGBERT H. GRANDIN: The paper meets with my full approval, assuming that the author meant to impose the limitations which have been referred to by previous speakers. I infer that he does not propose that every woman should be examined with the entire hand, but only when, from external configuration or because of delayed labor, it is necessary to make a more thorough examination than can be made with the fingers alone. I assume this because unless we are dealing with a multipara who has been torn open to the sphincter, I doubt whether the whole hand could be introduced without anæsthetizing the patient and I question the propriety of anæsthetizing every woman we see in labor. If, however, there seems to be anything wrong, I have always practiced and always taught the rule that the hand should be introduced to remedy the faulty presentation or determine the cause of the dystocia.

The hand is most important as a dilating agent, and I long since learned the inutility of resorting to any other in the vast majority of cases. In this respect I think that the hand is the best obstetrical instrument at our disposal—better than Barnes' bags and the instruments which have come to us from the French school. As a result of an extended experience, I am still able to say that in ninety-

eight per cent. of all cases, the woman being within six weeks of full term and under surgical anæsthesia, any man can dilate the cervix with his hand sufficiently to enter the uterus and extract the child. Dr. Marx' statistics are very valuable. I doubt whether any other member here to-night can refer to fifty cases where he has had such results in the presence of various emergencies. I have used my hand as a dilating agent in all the obstetric emergencies, and I have yet to lose a woman, and when I have lost a child it has been because it was practically *in extremis* when I was called to the case.

The objection urged by the opponents of this method is, I think, due partly to ignorance and partly because they have never resorted to it. In perhaps two per cent. of cases, it may not be possible to dilate with the hand. My object in coming here to-night was to get the opinion of Dr. McLean on this subject, and to ask him whether any deaths have occurred in his neighborhood after this method was resorted to by a man who understands it. A man who does not know how to do version or to use forceps may injure mother or child, and the man who does not know how to use this method may lacerate the cervix and rupture the uterus. It must be done slowly and carefully. Time must be allowed for the uterine muscles to relax; a period of twenty to twenty-five minutes, with the patient under deep surgical anæsthesia, is not too long to spend in this way. In the vast majority of cases the difficulty lies not in entering the uterus or in the version but in the extraction. Version must be followed quickly by extraction for, if there be any delay, the lower segment of the uterus may contract and the child will be lost.

Dr. MARX: Although I have never undertaken this operation with the intention of working against time, I did it once in a case of placenta prævia in seven and a half minutes. I was compelled to hurry, for it was a complete placenta previa, and the placenta was almost entirely detached, lying in the vagina, while the child was still in utero. But I managed to get a living child.

In the case of a primipara pregnant with twins in the eighth month, who had had several uræmic convulsions, it took me seventeen minutes and a half. In this case I dilated the cervix, perforated the first child, because it was already dead, and turned the second baby. In one case—the longest—it required an hour and three-quarters. In another case I failed to dilate a cicatricial cervix, and was compelled to resort to deep cervical incisions.

Dr. J. C. EDGAR: I think Dr. Grandin's percentage of ninety-eight is rather high. We had some discussion on this subject last year, and I then took exception to this statement. I take exception to it now, because I think it would be difficult to get a percentage like that without causing more or less damage to the mother. I would like to thank Dr. Marx for saying he does not work against time, watch in hand. There are two points of which I wish to speak—the preliminary preparation of the cervix and the full dilatation of that structure. Not every os can be dilated without preparation and it seems to me dangerous to attempt it. I saw a case last week in which accouchement forcé was done rapidly on account of eclampsia and in which a resulting laceration extended up into the folds of the left broad ligament. I stand with Dr. Grandin if he will modify his statement and say that if the cervix is a yielding one or has had some preliminary preparation it can be safely manually dilated in ninety-eight per cent. of all cases.

Dr. MARX: What do you dilate with in those cases in which you cannot dilate with the hand?

Dr. EDGAR: I think all cases can be manually dilated after preliminary treatment.

Dr. GRANDIN: When time will permit I always advocate preliminary treatment.

Dr. EDGAR: I understood that the statement had been made that the cervix could be safely dilated in ninety-eight per cent. of cases without preliminary treatment. The other point which I want to emphasize is that we should not begin the extraction until we have thoroughly paralyzed the os. Time is not so important as is securing paralysis of the lower segment. When the cervix is obliterated and practically continuous with the vagina, the os should be given a few minutes of firm dilatation over a period of about three minutes. Many times version is accomplished and the child extracted through a rigid os and the result is that the mother is subjected to a great deal of laceration, to say nothing of the loss of the child's life.

THE PRESIDENT: As manual dilatation of the cervix is not included in the subject of the paper, we will return to the questions which it discusses.

Dr. C. A. VON RAMDOHR: I am extremely sorry that I arrived too late to hear the paper. The use of the hand in obstetrics is of

the utmost importance. The author does not seem to have touched upon one point, *i. e.*, its use in extracting the after-coming head. Most of us have been taught that the forceps are occasionally necessary for this purpose, but our celebrated colleague, Mme. La Chapelle, who delivered more than 20,000 women, applied the forceps for this purpose in only two cases for experiment's sake. The hand is all that is necessary in such cases. Before the head is flexed it is impossible to use the instrument; after flexion the instruments are unnecessary. In case of necessity the most important thing is to extract quickly, even if the arms do fly up and one or both are fractured. In short, for purposes of dilatation, examination and manipulation the hand is the obstetrician's instrument.

Dr. H. L. COLLYER: The paper is of great interest to the general practitioner, for there are many men in general practice who are ignorant of asepsis. They use their hands and their instruments without disinfecting them and sometimes do not even wash them. In such a case, instruments are as dangerous as the hand. As pointed out by the author, the hand is of great value in making measurements of the pelvis. Some men are unfortunate enough to possess such large hands that the parturient woman would suffer if they were introduced into the vagina. When manual dilatation of the os is undertaken, it should be done slowly in order that the parts may have time to relax.

Dr. McLEAN: In closing, I have but little to add. I feel that I should apologize for the imperfections of my paper. In presenting one so brief I was obliged to omit many points I would have liked to refer to. Otherwise Dr. Grandin and Dr. Marx would not have had to complain because nothing was said about the use of the hand in dilatation. I fully agree with these gentlemen in most of the points they mention in regard to this. The tone of the paper shows that I depend almost entirely upon my hand and yet I do not think that I undervalue obstetrical instruments. The point which I bring forward is that modern teaching is drawing obstetricians into the swirl of the surgical tide, just as it has the gynæcologists. I think the time has come when we should properly measure things. Is asepsis everything? Is traumatism nothing? What causes the death of the woman who perishes on the operating-table or in the obstetric bed twenty-four hours after labor? Does any one mean to say that within twenty-four hours germs have entered that

woman's system and killed her? No! It is traumatism which has killed her and this traumatism we must avoid.

Furthermore, of what use is the pelvimeter when I can tell you the condition of the superior strait and its diameter to within a quarter of an inch by simply introducing my hand?

I do not want the criticism of Dr. Brothers to go on record, because he would not have made it had he understood me. I did not propose introducing the hand into the vagina of a primipara in all cases. It is in cases of dystocia—cases which are not normal—that I recommend the use of the hand and not as a routine measure.

In regard to manual delivery of the after-coming head, I feel as if I were an apostle of that method. I employed it recently in delivering a primipara, who had the narrowest parts I ever saw, of an eleven-and-a-quarter-pound baby, making the thirty-seventh consecutive case I have delivered in this way without losing a child.

Finally, I wish to emphasize the fact that the hand can do a great deal in obstetrics but that it is being driven out of use by the teaching of modern asepsis.

ARTHUR M. JACOBUS, *Recording Secretary*.

Official transactions.

Stated Meeting, October 19, 1897.

The *President*, ROBERT A. MURRAY, M.D., in the Chair.

Fibro-sarcoma of the Left Ovary.

Dr. VINEBERG: Mrs. L., from Florida, consulted me on September 18 of this year on account of general ill health, dating over several years, and stated that she had been treated from time to time for "womb trouble." She is thirty-three years of age; married fifteen years; has had seven children, the last three years ago. Labors had been easy—non-instrumental. Last April had uterine hæmorrhage, lasting a week; otherwise her menses have been normal in amount and in duration. In addition to her numerous symptoms, mostly of a nervous nature, for the past few months she has suffered from more or less pain in the left iliac region.

On examination, I found the right kidney displaced downward,

the lower edge being in a line with the umbilicus, the uterus in normal forward position and slightly enlarged. Left of the uterus was a mass, rather flattened in form, very hard, moderately sensitive to pressure and somewhat larger than a hen's egg. At a second examination, twelve days later, the mass on the left side of the uterus was found to have increased slightly in size. This feature, together with the patient's family history (several members having died of "malignant tumors"), made me strongly suspect a malignant growth of the left ovary. I urged, therefore, immediate removal. A very prominent gynecologist, to whom I had sent the patient for an opinion, confirmed the diagnosis of "tumor of the ovary," but unwittingly and unguardedly no doubt, characterized my suspicion of malignancy as "mere guess-work." On October 7, at St. Mark's Hospital, the tumor was removed per vaginam, through a posterior incision. It was found to be moderately adherent to the peritonæum lining Douglas' cul-de-sac. Its delivery was attended with some difficulty, owing to its size, but its ligation was easy, as the pedicle was fairly long. The right ovary was brought into view, and, as it was found to be apparently normal, apart from a few small cysts on its surface which were punctured, it was returned to the peritonæal cavity. The wound in the vagina was closed with catgut.

The specimen resembles a small kidney in shape and size. It is 8 cm. long and 16 cm. in circumference. On section, it has a lobulated appearance at the periphery presenting alternating lobules of gray or white, while the central part is white throughout. The following is the microscopical report from Prof. T. M. Prudden:

"The tumor consists of a series of irregular interlacing bands of fibrous tissue, intermingled with larger and smaller masses of closely packed fusiform cells. The tumor is but slightly vascular and is surrounded by a fibrous capsule. It is distinctly of the connective tissue type, and the grouping and character of the cell masses leads to the anatomical diagnosis of fibro-sarcoma."

The patient has made an afebrile recovery.

DISCUSSION.

Dr. GEORGE M. EDEBOHLS: I think Dr. Vineberg is to be congratulated upon having made the diagnosis so early and for acting upon that diagnosis. The great danger in sarcoma of the ovary lies

in that it generally becomes a fairly large tumor before it is diagnosed, and by that time such a degree of cachexia has developed that the patient succumbs to the shock or the disease has appeared elsewhere. The case also presents an argument in favor of radical treatment where a growing tumor in the pelvis is concerned.

Dr. CHARLES JEWETT: I had an experience similar to this in which the ovary was the size of a kidney. The tumor had been pronounced a floating kidney by a member of this Society.

Ovarian Cystoma Developing from the Remains of an Ovary left after a Conservative Operation.

Dr. H. C. COE presented a small ovarian cyst, with the following history: In June, 1896, he operated upon a young married woman (multipara) for persistent pain and dysmenorrhœa, due to gonorrhœal disease of the tubes. Both tubes and ovaries were enlarged, exquisitely tender and firmly adherent. History of recurrent attacks of peritonitis. After the usual curettage of the uterus vaginal section was performed and the left ovary and tube were enucleated completely off with catgut. As the right ovary appeared to be fairly normal, it was simply freed from adhesions, and the distal half of the corresponding tube was excised and the end treated in the usual way to secure its patency. No drainage; afebrile convalescence. The patient was not at all benefitted by the operation, or by subsequent after-treatment with ichthyol tampons, electricity, etc. She complained of more or less constant pain in the right side, and menstruation, though regular, was quite as painful as before. Repeated examinations failed to explain the persistency of the symptoms. The tissues at the site of the left tube and ovary felt normal, but the right ovary was still tender, though not enlarged.

Examining the patient again after an interval of three months, I found a mass at the right uterine cornu as large as a Messina orange. Her sufferings had now become so great that she desired relief at any cost. I accordingly curetted the uterus, opened the abdomen last May (just a year after the previous operation) and removed the cyst which I show. It was slightly adherent. No trace of the right tube and ovary, and all the exudate present at the time of the vaginal section had disappeared. Catgut ligatures and

sutures used in both operations. Convalescence entirely normal and patient discharged in good condition. Menstruation appeared at the usual time and was painless. The patient improved greatly during the summer, and menstruated normally till a month ago, when she wrote me that she had a profuse flow which weakened her considerably. I have not had an opportunity to examine her since she left the hospital four months ago. The specimen is interesting because it illustrates a fact noted especially by Martin, that after conservative operations on the ovaries the portion of stroma left behind may become the seat of cystic degeneration sufficient to require a separate operation.

This is one of several cases under my observation in which, although the function of ovulation has been preserved the severe pain persisting after the conservative operation has caused the patient to regret that the adnexa were not entirely removed. This subject has been one which has interested me considerably, as I have long been an advocate of conservative surgery, and will form the basis of a paper to be published later.

Fibroid Tumors Complicated by Pregnancy: Supravaginal Amputation; Recovery.

Dr. H. C. COE presented a fibroid uterus, with this history: Miss F., aged thirty-three, noticed a lump in her abdomen a year before I saw her. It was movable, painless, and caused no symptoms until three months before operation, when it began to grow rapidly and caused marked pressure-effects. Menstruation regular and flow normal amount, but ceased entirely in April. Her family physician examined her in July, detected a uterine fibroid, and also suspected that the girl was pregnant, although he had long known her and her virtue was believed to be assured. She absolutely denied its possibility. She entered the hospital July 19, 1897, and was examined by myself and by several of my colleagues, all of whom agreed that she was pregnant. (She eventually "owned the soft impeachment.") Supravaginal amputation of the uterus was performed three days later, catgut being employed, as usual. The operation was simple and the convalescence afebrile, the patient being discharged on the twenty-first day in excellent condition. The specimen presents no special points of interest, except that it shows

the danger of pregnancy in a fibroid uterus, and the fact that conservatism is rarely possible in connection with interstitial growths. I recall a similar case in a lady physician in which the patient aborted imperfectly and died of septicæmia through retention of the products of conception. That pregnancy may occur under the most adverse circumstances was illustrated by a specimen of enormous fibroid which I showed several years ago, removed from a colored maiden lady of forty-four. On opening the uterus a four months' foetus was found, the occasion of which was shrouded in mystery. There is every reason to infer that in the case here reported pregnancy greatly accelerated the growth of the tumor.

DISCUSSION.

Dr. EGBERT GRANDIN: I think Dr. Coe's first specimen is one which calls for considerable discussion. There is no doubt but that at the present time there is a tendency on the part of some to do ultra-conservative work on the tubes and ovaries, particularly when such work is done through the vagina. I have in mind now four cases in which as a result of leaving in a portion of the ovary and tube in the hope of warding off the premature menopause, with its exaggerated symptoms, the patients have become worse and still suffer from the symptoms of which they hoped to be relieved by the operation. They do not have a regular flow, but they bleed at intervals, and they certainly do have pain which radiates from the stumps. I am sure that in several of these cases I shall have to do a secondary operation to relieve this latter symptom. It is my opinion that we have gone too far in this matter of conservative surgery. In these cases, disease of the appendages has either gone so far as to require their extirpation, or else they should not be touched. I do not think that an ovary in which there are two or three cysts should be punctured or incised; if it is riddled with cysts, it ought to be extirpated. The same principle applies to the tubes—they ought either to be removed because of disease or left alone.

In regard to the abdominal *versus* the vaginal operation, to my mind one can do better conservative work through the abdomen than through the vagina, unless one is dealing with a multipara whose pelvic floor has been torn. In the average woman, in whom the pelvic floor has not lost its integrity, we can best operate

through the abdomen. This specimen presented by Dr. Coe has impressed me with a fact which I have already learned by experience, *i. e.*, that we ought to do thorough work or none at all. Pain and other symptoms after operation mean often that we have not performed complete work.

Dr. VINEBERG: Conservative work on the ovaries is so important that we ought not to be frightened away by a few bad results. We all, occasionally, meet with cases which are not successful. I do not agree with the last speaker that it is any more difficult to do conservative work through the vagina than through the abdomen. It is a matter of skill and experience, and we can do exactly the same work in one as in the other. During the last few years I have been doing what might be called "ultra-conservative" work in a number of cases. Three or four of these have not been successful, but, on the other hand, many have been successful and most gratifying. These were cases in which the ovary and tube of one side were diseased and removed, the tube on the opposite side partly amputated, and a portion of the ovary exsected if cystic or left intact if normal. This subject is an important one, and it is also important to note the details in these cases in the hope that in time we will learn in which cases the appendages can be safely left. We have still much to learn in this connection.

Dr. A. H. FREELAND BARBOUR, of Edinburgh, (present by invitation): I have but little to add to the discussion. However, I do wish to express my pleasure at being here this evening.

In regard to the question of conservative treatment of the appendages, I do not think that on our side of the water we believe much in removing portions of the ovary. I agree with the speaker who said that if the ovary be diseased at all it should be removed entire; and also that the pain of which patients complain after operation is sometimes due to incomplete removal of the tube or ovary. There are some cases in which we become entirely conservative after opening the abdomen. I myself am becoming more and more conservative. It is only by following cases for years that we can judge of the results obtained by operation.

Dr. JOSEPH BRETTAUER: The second specimen presented by Dr. Coe brings to my mind the question as to the indications for removal of the *pregnant fibroid* uterus. About six weeks ago I removed a four months' pregnant fibroid uterus weighing nineteen

pounds. I was obliged to do this because the woman could no longer breathe without difficulty. The tumors (there were three of them) grew so rapidly that they filled the abdomen and caused the most marked dyspnoea. But for this, she was in good condition, and there were no other symptoms. She made a splendid recovery. In another case which I had under observation, I did not remove the uterus. The patient was allowed to go to term, was easily delivered, and the fibroid, which had been the size of a child's head during gestation, diminished gradually until it was no larger than a small fist a few weeks after delivery. It is a question whether every pregnant fibroid uterus should be removed. Many of these patients go to term and expel a healthy child without accident or complication. I would like to ask Dr. Coe what were the special symptoms which led him to remove the uterus; or if it was simply because pregnancy existed, associated with uterine fibroid?

Dr. HORACE TRACY HANKS: In connection with the first case reported this evening (Dr. Vineberg's), I would like to mention one point in regard to the method of removing the tubes and ovaries through the vagina. At the present time I do not believe the vaginal route is as safe a way to remove the diseased tubes and ovaries as the suprapubic route. I advise the operation from above in all cases where I am to *leave* the uterus *in situ*. I am sure no one will accuse me of being afraid to operate from below; yet I have made so many errors when operating in this way that I prefer the abdominal route. It is as easy, more easy in fact, for me to bring down simply a movable tube and ovary and determine whether it is sufficiently diseased to warrant removal, as it is for me to do it from above, but the latter method is safer in the end, because more thorough. I know, as well as I know anything which has not occurred, that my patient will live. Perhaps if all the details as suggested by Dr. Pryor were minutely carried out, the operation would be more exact; but the *average* operator does not do this.

The second case reported by Dr. Coe illustrates a point which I have carefully studied. About ten years ago I wrote a paper on the subject of the growth of fibroids during pregnancy. It was read before this Society, and published in the American Journal of Obstetrics, March, 1888. From my own extensive experience, and also from the Guy's Hospital reports, I am sure that during the first

five or six months of gestation these tumors always grow rapidly; after this time they remain about the same size until delivery and then often gradually diminish in size. Accordingly, if one can be quite sure that the tumor will not complicate delivery, it can be left *in situ* with safety. I have seen three cases in which gestation was complicated by uterine fibroid and in which labor was perfectly normal. And again, in several of my cases with uterine fibroid, simply a thorough understanding of the laws of mechanics enabled me to risk delay, and in the end to deliver a living child, with no severe postpartum hæmorrhage to worry me. My advice is, therefore, "treat each case on its own merits."

In other words, learn the *site* of the tumor first—then with our knowledge of the *probable* growth, you must (1) remove the tumor, (2) the uterus and tumor, or (3) risk delay—just as this particular case may require.

Dr. SIMON MARX: I think the point made by Dr. Brettauer is a very admirable one and a very important one. It is a fact that fibroids grow very rapidly during pregnancy; but it is also claimed that they diminish in size and even disappear entirely after delivery. Therefore, in such a case I would empty the uterus instead of removing it when pressure symptoms arise. I remember a case in which pregnancy was associated with one of the largest fibroids I ever saw.

I emptied the uterus at once because the tumor blocked the superior strait to such an extent as to make delivery at term impossible. I think we are justified in extirpating the pregnant fibroid uterus only in those cases in which delivery is impossible. When pressure upon the diaphragm becomes marked it can be relieved immediately by emptying the uterus.

Dr. JEWETT: To what extent the conservative treatment of tubes and ovaries can be carried out in a given case is a question of judgment which, as a rule, can easily be decided at the time of operation. A small fragment of ovarian tissue is enough to preserve the sexual functions, and it is seldom that no sound tissue can be found. In many cases some part of an ovary can be left with no subsequent trouble. That at least has been my experience.

I recently operated in a case somewhat similar to one of those just reported. The history is as follows:

Pregnancy complicated by a Large Fibroma Uteri.

In July last I was requested to see in consultation Mrs. Y., a multipara at about the middle of the eighth month of utero-gestation. The woman was badly nourished and greatly exhausted. On examination, I found the uterus partly occupied by a fibroma spring-



Specimen of Pregnancy with Fibroma Uteri.

ing from the left wall of the body and cervix. The growth filled nearly the lower two-thirds of the uterus. The cervix was dilated to twice the size of a silver dollar and through it the tumor protruded to the extent of about an inch. The upper segment of the uterus contained the foetus lying in transverse position. The patient had seen two or three gynæcologists during her pregnancy, all of whom had advised immediate surgical interference, but this she had refused. Though entertaining little hope of saving the woman's life, I delivered her by Cæsarean section and removed the uterus by Doyen's method. The pulse was 140 before the operation was begun and at the close it was 160. Death occurred about thirty-six hours later from exhaustion. The child, which weighed five pounds at birth, is still alive and thriving. The weight of tumor and uterus was eight pounds. The walls of the portion of the uterus which contained the tumor were exceedingly thin. The growth was attached throughout its (the tumor's) entire length longitudinally and over the larger part of the circumference of the uterus. It was with some difficulty that a uterine sound could be passed from the cervix into the cavity which had contained the foetus.

Time is an important element in Cæsarean section, and it is possible to open the abdomen much more rapidly than in ordinary laparatomies. In the case just reported I proceeded somewhat cautiously owing to the complication; the child was out in a minute and a quarter from the first incision. A few weeks before, I did a Cæsarean section in which the child was delivered in forty-eight seconds.

DISCUSSION.

Dr. COE: In regard to the case in which I removed the pregnant uterus I mentioned that the patient had no symptoms until three months before the operation; but it is well known that rapid growth of a tumor with pressure symptoms is an indication for operation. It is not very easy to empty the pregnant uterus in these cases, and, then, one never knows just what is going to happen. I saw in consultation a case in which it was utterly impossible to extract a three months' foetus on account of occlusion of the cervical canal caused by pressure of a tumor against it, and the pa-

tient died of septicæmia. It seems to me that in these cases the position of the tumor is of more importance than its size.

I have come to believe, with Dr. Grandin and Dr. Hanks, that the abdominal is nearly always preferable to the vaginal route in operations upon the appendages except, of course, in pus cases, because it is necessary to see as well as to feel the interior of the pelvis.

THE PRESIDENT: I recommend that at some future time this subject be taken up for general discussion—the treatment of pregnant fibroid uteri; whether extirpation of the uterus or Cæsarean section should be performed, or the patient allowed to go on to term and delivery without interference. I think it would be most interesting and instructive. These cases are not of such frequent occurrence that every man sees a large number of them, and we will all benefit by hearing each other's experience.

Amenorrhœa.

BY E. L'H. MCGINNIS, M.D.

(See page 662.)

DISCUSSION.

Dr. COE: Cases of amenorrhœa occurring usually in young married women who have previously menstruated regularly and who have rapidly become stout, seem almost hopeless. I have used electricity faithfully in such cases, but with very unsatisfactory results. In some it has been followed by a slight attempt at menstruation, but nothing more. In one instance, however, in which the patient succeeded in reducing her weight twenty pounds or more, the flow did return regularly. I have accordingly aimed to accomplish this in such cases, by the use of thyroid extract as well as proper diet and exercise.

Dr. BRETTAUER: I feel like congratulating Dr. McGinnis on his results, for in the class of cases he describes I have never had such success. Perhaps I did not apply electricity in the manner he does, or perhaps I did not use it for a sufficient length of time, but I have had no such results. I am very glad to hear that some-

thing can be done in these cases. In the treatment of that class of cases to which Dr. Coe referred and of which the author says he does not believe that obesity had any connection with the cessation of menstruation, I have been more fortunate. I have now in mind several cases, which will be reported when the time comes, in which I have been able to bring on a normal menstrual flow by the use of the thyroid extract. I have experimented with it, given it in too large doses and in doses which were too small; I have given it for too long a period, and when I first began using it I did not watch my patients closely enough. It is a dangerous agent, we know very little about its physiological action, and its effect upon the heart must be carefully noted. It must be discontinued at once if cardiac symptoms appear.

Dr. RALPH WALDO: In the class of cases to which Dr. McGinnis especially referred, *i. e.*, young women, I have used electricity quite extensively, both galvanic and faradic; have dilated the cervical canal, and have douched them, but I must confess that local treatment has been of very little benefit. So far as medication is concerned, the one drug which has proved most beneficial is the binocide of manganese, in doses of two grains three times a day, continued for a long time. I recall a case where the uterus was very small and the flow appeared only at intervals of months, in which a normal flow was established by the use of this drug. My loss of belief in local treatment has been so great that when I can find no other condition save a small uterus I do not resort to it. In regard to the use of thyroid extract, I have three patients in whom the menstrual flow had diminished or ceased and who became very stout. I gave them thyroid extract to reduce the obesity and, to my great surprise, the flow has been reëstablished. I know of other cases where the extract has produced an excessive flow.

Dr. H. L. COLLYER: This subject is one of great interest. The cause of the amenorrhœa should always be sought because the treatment differs so much. In cases where there is a tubercular family history we will often find amenorrhœa, and such patients will often menstruate if placed on appropriate treatment, iron, tonics and cod-liver oil. In cases where there is beginning atrophy of the uterus, the faradic current has given very good results in my hands. By reducing the adipose tissue in obese patients either by exercise or by giving thyroid extract or large quantities of iron, the flow is

often reestablished, but I have yet to see a case in which pregnancy followed. Improvement has resulted from the administration of ovarin in cases where there is beginning atrophy, but the faradic current will give the best results, and it should be resorted to in all such cases.

Dr. VINEBERG: About a year ago I saw in a German journal an article on the use of thyroid extract in amenorrhœa, and since then I have employed it in a few cases but not as yet with good results. These cases are sometimes very curious. I have a patient who is irregular in her menstruation, going at times six months without having a period, and she is never so well as when it does not appear. When she menstruates she is miserable and the flow is apt to be excessive. Still, she has an idea that she ought to menstruate, and is continually bothering me to bring it on. When she is at the seashore, however, menstruation comes on regularly and profusely.

In some cases of amenorrhœa electricity seems to be the rational treatment. In cases where the uterus is small and rudimentary, it does not necessarily follow that the ovaries are undeveloped. I once opened the abdomen in such a case (very rudimentary uterus and absence of a vagina), that of a young girl, who suffered very severely from menstrual symptoms, and at first thought the ovaries were absent. After some search one was found in the false pelvis and the other just below the liver, both being of good size. What I took to be the ovaries by bimanual examination proved to be the two cornua of the uterus about three inches apart, situated at the side of the pelvis connected by merely a duplicate of peritonæum.

Dr. MCGINNIS: I am interested in the remarks made in reference to menstruation being reestablished when the patient is at the seashore. This is a fact, and I have seen many cases in which menstruation is entirely different at the seashore or during a voyage. I remember one case in particular which I saw on board the steamer *St. Louis* this summer. The patient was a steerage passenger, who had always menstruated normally, who suddenly began to flow so excessively that she soaked through everything, even the mattress. It was the most obstinate flow I ever saw. The ship surgeon had tamponed her, but with no effect, and was at his wits' end to know what to do. At my suggestion he put the woman on the table, introduced an old Ferguson speculum (the only one on board), and we finally managed to cauterize the endometrium with pure

carbolic acid. This stopped the bleeding for a while, but we were both glad when Sandy Hook was sighted.

Dr. MCGINNIS: I first want to thank you all for having treated me so gently. I was a little bit in doubt as to the reception which would be given to any one who dared say anything good about electricity.

In regard to the cases in which menstruation is suddenly arrested, my experience has taught me that there is generally some reason for it—generally some emotional cause. In such cases the bi-polar intra-uterine application of faradic electricity will often make a normal uterus do its work. I have found the galvanic current, with the negative pole in the uterus, best for those who have never menstruated, for it is well known that the blood will flow toward the negative pole.

As to the use of manganese, I think highly of it in *functional* trouble, but there are cases in which the amenorrhœa is due to an infantile uterus and in which it will do no good.

I think Dr. Brettauer misunderstood what I said about obesity. I meant to say that in my experience I have found that obesity has not much to do with amenorrhœa. I know of one stout woman, very large and a decided blonde, who used to have a half-day flow which had to be brought on by taking douches, sitz baths, etc. Since she came under observation she has increased in size, is as blonde as ever, and yet she menstruates three days.

In regard to Dr. Collyer's remark about tubercular family history, I do not think such a family history has much to do with amenorrhœa unless the *patient* is tubercular. In such event, she should of course be put upon treatment for that condition in order to relieve the amenorrhœa.

Dr. A. M. JACOBUS asks Dr. McGinnis what percentage of successes and failures he had had in treating these cases with electricity, since in his paper he had only referred to the former.

Dr. MCGINNIS: It is difficult to give the percentage. In cases of non-activity I have been very fortunate. In patients with infantile uterus, where the organ is not big enough to do its work, I have been successful in perhaps sixty per cent. of the cases.

In Memoriam: William Thompson Lusk, M.D., LL.D.

BY HENRY C. COE, M.D.

(See page 645.)

The Society then went into executive session.

The following Fellows were elected officers for the ensuing year:

President, Dr. W. Gill Wylie; First Vice-President, Dr. J. C. Edgar; Second Vice-President, Dr. A. M. Jacobus, Recording Secretary, Dr. Le Roy Broun; Assistant Recording Secretary, Dr. Geo. W. Jarman; Corresponding Secretary, Dr. E. B. Cragin; Treasurer, Dr. J. Lee Morrill; Pathologist, Dr. Geo. C. Freeborn.

Official Transactions.

ARTHUR M. JACOBUS, *Recording Secretary.*

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, October 7, 1897.

The *President*, E. E. MONTGOMERY, M.D., in the Chair.

A Clinical Study of Two Unique Cases of Abdominal Section.

BY ANNA M. FULLERTON, M.D.

(See page 656.)

DISCUSSION.

Dr. B. F. BAER: I have never met with a case of double ureter, and by a fortunate combination of circumstances I have never wounded one. On one occasion I included a ureter in a ligature but fortunately recognized it before I severed the pedicle. All of the others kept out of my way. I have often wondered why, in the

many deep pelvic enucleations that I have been compelled to make, the ureter was not torn. Of course, the explanation is at hand in the fact that the ureter is anatomically placed in a position of great security in relation to the pelvic organs, so that even pathologically this relation and security is maintained in the vast majority of cases. The conditions in which this relation is oftenest destroyed are the deeply burrowing intraligamentary tumors which develop from the hilum of the ovary, and the intraligamentary and retroperitonæal fibroids. The method of management of the severed organ is certainly excellent in this case and the result almost more than could have been expected. However, I believe the wounding of the ureter should be regarded as an operative calamity and to be as carefully guarded against as if we did not know that the reported cases had all recovered and done well subsequently. It is to be feared that future trouble might result from narrowing of the calibre of the organ at the point of attachment.

My experience in splenectomy is limited to one case, operated on ten or eleven years ago; but unfortunately I cannot show the patient. She died within twenty-four hours from previous exhaustion and from loss of blood at the operation, because of the great intestinal adhesions and large venous supply which could not be controlled. I promised myself when I got through with the operation that I would try to send the next case of that kind to one of my enemies! The organ was many times larger than Dr. Fullerton's specimen and a diagnosis was made before the operation. I do not exactly understand why Dr. Fullerton should have made a diagnosis of extra-uterine pregnancy in her case but I suppose I did not attend very closely to the reading of her paper. The diagnostic difficulties are also more vivid in the presence of the case than on paper. Dr. Fullerton is to be congratulated.

Dr. IDA RICHARDSON: I am very glad to have heard of these two cases and do most heartily congratulate Dr. Fullerton upon the success of both.

Dr. JOHN C. DA COSTA: I was so unfortunate as not to hear the first part of Dr. Fullerton's paper. I have never seen a double ureter extending the whole way from the kidney to bladder, the longest seen being about seven inches.

In regard to the second paper, which I heard, I do not wonder that Dr. Fullerton was led astray and imagined the case was extra-

uterine pregnancy. We know how these cases of extra-uterine pregnancy vary in the symptoms. The patient had a mass in the right iliac region, she had irregular hæmorrhages, she had a growing mass, she had the shedding of the decidual membrane of the uterus. These symptoms are those which we are apt to find in extra-uterine pregnancy. I question if either of us had opened the abdomen we would have expected to find other than extra-uterine pregnancy.

A Case of Abnormal Development of the Sexual Organs.

Dr. F. HIRST MAIER: The case I have to report this evening is one of much interest, being of "uterus unicornis sinistra, with absence of entire vaginal canal."

The history is as follows: Mrs. P., aged twenty-nine; family history, as ascertained, good; never menstruated, vicariously or otherwise.

Up to the time of her marriage, seven years ago, patient enjoyed very good health. Immediately after, however, she was taken with intense pains in the lower pelvis, cramp-like in character, starting from a point corresponding with the left ovarian region and extending downward and inward to the uterus. These attacks have been recurring at monthly intervals ever since, lasting a week, and being of such severity as to confine the woman to bed. In the intervals she suffered but little.

On examination, the vulva was found to be normal. Below the urethra, and corresponding with the usual situation of the vaginal outlet was a small sacculation. This was probably three-quarters of an inch in depth, and admitted the end of a finger.

The recto-abdominal bimanual method revealed no trace of a vagina.

In the pelvis, more to the left of the median line, where the uterus is usually found, was a mass the size of a large fist. This appeared to be more or less regular in outline, especially to the right, a small furrow at the top apparently being a mark of division of what seemed two parts, the larger of which was to the left. From its appearance I thought it might possibly be a bicornate uterus, with the left half distended by an accumulation of blood.

Before opening the abdomen a horizontal incision was made in

the sacculated pouch, and the tissue dissected up to the mass with the hope of finding some trace of vagina. There was none. Upon opening the abdominal cavity, it was found that of the mass in the pelvis the smaller part in the median line proved to be a left unicornate uterus; the large mass to the left a tubo-ovarian hæmatoma the size of a small fist.

The sac involved the tubal and ovarian structures, being adherent to the lateral and posterior surfaces of the uterus and the surrounding parts. It was filled with dark, coffee-colored, clotted and fluid blood.

The right half of the pelvis did not disclose the presence of a rudimentary horn, tube or ovary.

The mass to the left of the uterus alone was removed. The uterus was allowed to remain because removal of this organ would have established a communication with the opening below and thus created a possible avenue of infection from the exterior.

The patient made a good recovery, and up to this time, five months since, has been free from pain.

The vaginal opening was not allowed to close. It is two to three inches in depth and lined with epithelium. It seems to serve its purpose very well, as satisfactory coitus is carried out.

The case is one in which there was no development of the Müllerian duct and ovary on the right side and only incomplete development on the left, as was evidenced by the entire absence of any vagina.

The latter feature is of special interest, as it is very unusual for a well-developed unicornate uterus to be unaccompanied by a correspondingly developed vagina.

The attacks of pain at each menstrual period were no doubt due to hæmorrhage into the tumor and probably hæmorrhage into the uterus.

A Case of Hysterectomy for Intraligamentary and Subvesical Fibroid Tumor.

Dr. B. F. BAER: My apology for bringing before the Society this fresh specimen is that the operation for removing it was one involving considerable magnitude in dissection and, although I have met with a good many intraligamentary and retroperitonæal

fibroids, I have never met with one exactly like this in location; and, further, because the fresh specimen is a better demonstrator than an older one. In its growth it became a subvesical, intraligamentary tumor rather than post-uterine. It developed and grew downward and forward rather than downward and backward. This made the operation for its removal exceedingly difficult and dangerous to the ureter and bladder.

M., aged forty-seven, had an apparently normal menstrual life up to two or three years ago, when she began to experience an increased amount of flow. About a year ago metrorrhagia occurred and then the hypogastrium was found to be enlarging. The hæmorrhage increased, so that she finally bled continuously but, although the loss affected her health profoundly, it was pressure symptoms which finally drove her to submit to the operation. Vesical tenesmus had become extreme.

I knew from the physical examination that the tumor was located far down in the pelvis and that it was anterior rather than posterior, but I did not anticipate the difficulty I encountered in the operation. The tumor-mass and uterus were covered by the bladder, and you can see, from a distance even, that the specimen is almost entirely denuded of peritonæum. Enucleation was practiced almost from the beginning. It was very difficult to place the ligatures on the ovarian vessels, because it was impossible to draw the tumor through the incision. It was therefore necessary to make the entire dissection in the pelvis. The steps were, beginning on the left side, ligating the broad ligament as far as I could reach; then attempting to feel the uterine artery, which I finally did, and its ligation. After severing the broad ligament I endeavored to locate the cervix so that I might amputate it and thus reach the other uterine artery, but I could not do this, and from fear of severing the ureter or opening the vagina I began the deep enucleation from the anterior and right side. This required the stripping off of the bladder from its entire cellular connection to the uterus. The enucleation was carefully continued downward and backward, keeping close to the tumor and stripping off all loose cellular tissue. Finally the tumor-mass was released and brought up through the incision, when the right uterine artery was seen to be bleeding freely. This was at once caught and ligated. The cervix was then located and severed. There was considerable venous oozing but it was controlled by

pressure. The operation was finished by carefully suturing the peritonæal folds from side to side. After being satisfied that all hæmorrhage had ceased, I closed the abdominal cavity, neither irrigation nor drainage being deemed necessary. The patient was returned to bed in good condition and she is doing well this evening.*

Degenerating Fibroma of Uterus with Pyosalpinx. Hysterectomy.

Dr. GEO. ERETY SHOEMAKER: This case presents several features of interest: Great anæmia from hæmorrhage, old pelvic abscess pointing above Poupart's ligament, recent ischio-rectal abscess, pyosalpinx and fibroid tumor of uterus breaking down; hysterectomy; recovery. The patient, from Altoona, Pa., was single, twenty-nine years old, home employment. Mother died of phthisis when patient was ten years old; a grandmother died of "dropsy." Rather sickly as a child, sweating at night and cough continued for a year after an attack of pneumonia. Menses at twelve years, always with pain referred to rectum. Ten years ago attack of peritonitis, followed by an abscess pointing on the right abdomen above Poupart's ligament, where it was lanced by a physician. The discharge of pus gradually ceased never to return. For four years after this attack patient was an invalid with severe hæmorrhage and pain at monthly periods. Several months ago developed ischio-rectal abscess, followed by fistula in ano, which was operated upon two months before coming under the writer's observation. For several recent months there had been severe flooding at the frequent and irregular monthly periods, so that on the patient's admission to the Methodist Hospital in February, 1897, the hæmoglobin percentage was only thirty-eight. Abdominal pain was constant and often severe. General tenderness of abdomen, most marked on left side.

Examination.—An old depressed scar on the abdomen two inches above Poupart's ligament, where the abscess had drained years before. Firmly attached to this scar is a hard, very tender abdominal tumor, completely filling the right lower quadrant of the abdomen, reaching the navel above and extending two inches to the left of the median line. The uterus below is lost in this mass, which is adherent in Douglas' cul-de-sac, a rounded portion pressing down the

* The after history in this case was without event, and the patient made an uneventful recovery, the temperature never rising above 100.8°.

posterior vagina to within an inch and a half of the outlet. Rectal examination shows a small mass possibly of cheesy material behind the rectal wall, and probably related to an old fistula in ano. The urine was negative.

Diagnosis: Uterine fibroma adherent to old abscess scar in ab-



domen. The percentage of hæmoglobin, thirty-eight per cent, was considered too low to make justifiable at that time so formidable an operation as hysterectomy would probably be, and consequently seven weeks were spent in preparation for the operation. Under

general massage, the administration of iron, and the use during the flooding attacks of a tight vaginal pack (which possibly made pressure upon a uterine artery presenting in the vagina), the hæmoglobin was raised to sixty-two per cent.

Operation.—The bladder and descending colon were densely adherent in front of the tumor to the left, the colon being firmly attached to the pelvic rim in front. After separation persistent bleeding in the colon wall required a suture for its control. On the right side a loop of ascending colon firmly adherent to abdominal wall at site of old scar. General intestinal adhesions about right tube and ovary. It was not possible to determine the origin of the abscess of ten years before, as nothing remained of it except adhesions above the ilio-pectineal line. The right tube had never been ruptured apparently, and contained about one and one-half ounces of greenish yellow pus without odor. It curved backward and downward behind the fibroid, into the cul-de-sac of Douglas and was with great difficulty removed, and then only after the extirpation of the fibroid. Right ovary spread out over the tumor wall very low down. Left tube was buried in very dense adhesions but contained no pus. The left ovary was buried in inflammatory exudate, but was structurally normal and was allowed to remain. The broad ligaments could not be recognized on either side. After ligating on both sides of the tumor and cutting inside the ligatures, the tumor was gradually brought up. The teeth of the heavy hooked-traction forceps applied to the top of the fibroid entered a cavity or area of degeneration in the tumor body in front, from which pus-like fluid oozed during the remainder of the operation. After a very difficult dissection the uterus was freed and cut off at the cervix. Both tubes and the right ovary were afterward removed. The flaps of the cervix were united by suture, the peritonæum closed over it as far as possible. Copious irrigation of peritonæum, with normal salt solution, followed. Bag drain of iodoform gauze through the wound, a glass tube above it. Salt solution enema on operating table to lessen shock from loss of fluids. To bed in fair condition.

After-History.—Recovery proceeded steadily. Gauze drain transmitted much serum, the tube little. Last of the gauze removed in five days, the tube in six. Wound aseptic. On thirteenth day some concern was felt because of a rise in temperature to 103° with pain in the abdomen. Immediate relief, however, followed the

discharge, through the stump of the cervix, of an ounce or more of reddish fluid, and no further complication occurred. The hæmoglobin at this time was fifty per cent. Five months later the patient writes that health is good. She attends to her household duties. Menstruation continues, owing to the presence of the ovary, which is an advantage in the case of so young a woman.

Specimen.—The tumor, which is now in the museum of the College of Physicians, consists of four chief fibroid nodules, one of which, in the posterior wall, is undergoing expression into the uterine cavity. This was probably the source of the hæmorrhage. The largest nodule is subperitonæal, firm and hard except for an irregular cavity shown at A, two inches in some diameters, containing thick muco-purulent fluid, its walls without limiting membrane. At this point and one other half an inch in diameter near the peritonæal surface the tumor was undergoing degeneration. No communication was discoverable between the uterine cavity and these sacs. The photograph shows the specimen shrunken by months in alcohol. It weighed originally about five pounds.

It may be remarked in conclusion that considering the intense anæmia from hæmorrhage, the presence of pyosalpinx, the areas of degeneration in the tumor itself, the early death of the patient without operation would have been inevitable, and no treatment aside from hysterectomy offered any hope.

DISCUSSION.

Dr. G. E. SHOEMAKER: I would like to ask some one to give an opinion of the propriety in leaving sound ovary in extirpation of fibroid in a young woman.

Dr. E. E. MONTGOMERY: I should see no reason why there should be any objection to leaving an ovary under these circumstances, and there are certain advantages invariably in the retention of the ovary, even though the uterus be removed, as the influence upon the subsequent processes of the individual renders the change of life less rapid, decreases the tendency to severe flushing and other reflex phenomena which occur during the progress of the climacteric, so that it is recognized as good treatment to leave an ovary or part of ovary, even though the uterus and other organs be removed.

Official transactions.

FRANK W. TALLEY, *Secretary*.

OBSTETRICS.

UNITED STATES.

Occipito-Posterior Presentation.

L. G. LANGSTAFF (*Brooklyn Med. Jour.*, June, 1897) says that in his experience occipito-posterior presentations in which the head failed to rotate have occurred much more frequently than is usually estimated in statistics, viz., once in two hundred and fifty labors. It is not always easy to make an exact diagnosis of position, and often the physician contents himself without it in the idea that even if the occiput be posterior rotation will finally occur; in this way these cases are allowed to progress to a situation of grave difficulty, in case the head does not finally rotate. The latest theory of the mechanism of rotation is that whatever part of the child's head first touches the pelvic floor will rotate to the front. The author believes that the occiput always touches the pelvic floor first; if it be true that the pelvic floor causes rotation of the head (when this occurs in these cases) it must rotate the head through three quarters of a circle and the body through a part of this distance during a very short space of descent; and the pelvic planes together with the natural tendency of the shoulders to take an oblique position seem much more likely agencies. However, it is before the head touches the pelvic floor that we are compelled to interfere, on account of the duration of the labor and arrested descent. The author's course is to make a positive diagnosis of position before the head enters the pelvic cavity, by passing the hand, under chloroform if necessary, into the vagina, and then to place the occiput by conjoined manipulation in the required position, L. O. A. or R. O. A. If we leave rotation to occur of itself when the head reaches the pelvic floor, we shall have a very exhausting labor, if not an arrested one in which we shall be obliged to give aid.

In the discussion, Dr. R. L. Dickinson considered the long first stage due to tardy dilatation, and the indication therefore is to sustain the patient's strength and to assist dilatation, the latter manually if the patient gives signs of becoming worn out. It is important to pass the hand into the vagina when the diagnosis is not

clear; and the best landmark is the ear, the direction of the flap showing that of the occiput.* In the second stage most cases can be left to nature. Several procedures have been recommended—pressure with the finger upon the temple or upon the ear, or rotation of the head with the hand passed into the vagina or with reversed forceps—but these measures are usually either inefficient or dangerous. There are but two safe methods in really difficult cases. One is to draw down the head with the forceps in the hope that when it reaches the pelvic floor it will rotate, when we can re-apply the forceps and deliver occiput anterior. The other method—which we may call *high manual internal rotation*—consists in passing the hand into the uterus past the head of the child, pushing the latter up out of the pelvis, seizing the shoulder with two fingers, and turning; it is not sufficient to rotate the head into an occipito-anterior position, because we thereby twist the body of the child and its untwisting will swing the head into the old position before we can get the forceps on; so we must rotate the head and the body as well through half a circle, and when we put on forceps we shall find but a partial return; e. g., we rotate an R. O. P. to an L. O. A., which latter slips back into an R. O. A. This operation is safer for the child than a podalic version.

Dr. J. L. Kortright has found occipito-posterior positions rather frequent, many of the cases being in stout German women with slight shortening of the conjugate diameter; out of 200 cases 59 have been occipito-posterior positions, seven on the left side and 51 on the right. In five of these cases there was neither manual nor natural rotation, and they were delivered by forceps with the occiput posterior; three were rotated by Dr. Dickinson's method; seventeen were delivered by forceps for various reasons; in one case podalic version was done on account of prolapse of the cord; and thirty-three delivered themselves by their own unaided efforts. Two of the cases were twins, the first child in each case being in the R. O. A. position. Twenty-two of the cases were primiparæ.

A Report of Two Cases of Puerperal Convulsions Treated With Large Doses of Morphine Hypodermically.

J. F. HEADY (*Cincinnati Lancet-Clinic*, July 19, 1897), describes the two following cases of eclampsia, due to increased nervous ten-

sion and reflex nervous irritability rather than of uræmic origin. Case I., nineteen years old, primipara, had been well during pregnancy, had had no œdema, and had excreted a normal quantity of urine up to the time of labor. On the night before labor she was much excited by a fight which took place in the house but in which she did not participate. The next morning at six o'clock labor began; at nine she had a convulsion, which was repeated at ten fifteen and at eleven. She was first seen after the latter; her pulse was 100, temperature 101° F. Two ounces of clear urine, drawn by the catheter, showed no albumin. At eleven thirty another convulsion occurred during which the membranes ruptured; under chloroform the os was then dilated and a well-developed dead child delivered by podalic version. At twelve thirty p. m. the patient again had a convulsion, after which there was profound coma, with a pulse of 140 and a temperature of 104° F. One grain of morphia was given hypodermically. The respirations at three were 10, and at six 14, when a half grain of morphia was given. The temperature and pulse gradually declined during the following day; she could then answer questions intelligently, and made an uneventful recovery. Somewhat less than three years later, this patient was delivered of a healthy child after a normal labor.

Case II., aged twenty-two, primipara, had been passing plenty of urine of good gravity and without albumin or casts, and had had no œdema or pallor. After twenty-six hours of labor, which was at first tedious but was at last progressing satisfactorily with fully dilated os and with the head distending the perinæum, a convulsion occurred without warning. Forceps were immediately applied and a living child delivered a little after six p. m. Another convulsion occurred at seven, followed by coma and cyanosis; the temperature was 103° F., pulse 120, respirations 40. One half grain of morphia was given. A third seizure took place at ten in which artificial means were required to restore respiration. After this the temperature rose to 105° F. and the respirations to 30, but the pulse was too rapid to be counted. One grain of morphia was administered. On the following day the pulse and temperature improved, and the patient became conscious and answered questions intelligently though the respirations were only six. A good recovery followed.

By these cases we see that the trauma to the nervous system

which produces the convulsions may take place either before or after labor. There was no question of uræmia in these cases; in the latter condition there would have been decreased excretion of urine, œdema, albumin and casts in the urine; great restlessness *before* the first seizure, severe pain in the head and epigastrium, nausea and perhaps vomiting. In the nervous cases all of these symptoms are absent except possibly headache. The treatment here employed relates only to those cases dependent on increased nervous tension and reflex nervous irritability; the patient should be immediately delivered; when the convulsions are severe and close together—from thirty to sixty minutes apart—not less than a grain of morphia should be given hypodermically; when they are slighter and less frequent and the patient entirely regains consciousness between them, a half grain will often be enough.

FRANCE.

Marmorek's Serum for the Treatment of Puerperal Septicæmia.

CH. VINAY (*Lyon Médical*, June 6 and 13, 1897), reports the results of a series of thirteen cases of puerperal septicæmia treated by sero-therapeutics during the past year at the Maternité de l'Hôtel-Dieu and in consultations in private practice. The serum employed was furnished by Marmorek of the Pasteur Institute and by Mérieux and Carré of Vaise; its immunizing power ranging from 1:20,000 to 1:30,000. The results obtained were nine recoveries out of thirteen cases; which appears favorable in the abstract; but in a disease like puerperal septicæmia presenting such variability in its course, localization and gravity, it is necessary to consider the details of the cases rather than in block. Summary of cases:

Cures (nine cases). Case I.—L. J., age 22 years, primipara, normal labor at term, Jan. 22, 1896.

Jan. 22. Chills, temperature rising to 40° C.; no indication of localization except pains in uterine region. Uterus washed with hot borated solution.

Jan. 27. Diphtheritic exudate appeared on the vulva and vagina. Tr. iodine was applied and the vagina packed with iodoform gauze.

Jan. 27. Same conditions. Uterus curetted and 15 cubic-centimeters of antistreptococcic serum injected.

Jan. 28 and 29. Same conditions. Thirty cubic-centimetres of serum injected each day.

Feb. 6. Temperature fell and an abscess formed in the calf of her left leg, which was opened. Later on other abscesses formed in the same vicinity, all of which contained streptococci. Cultures made from blood taken from the veins at the elbow were sterile. Complete recovery by the early part of March. This was the only case of the series that did not have Marmorek's serum; that of Chaix & Remy was used which being weaker, larger doses were required, 70 cubic-centimetres being given in three days, with a rather poor result.

Case II.—X., 30 years old, primipara in the fourth month of gestation, who due to the efforts of a midwife at abortion had an acute attack of salpingitis on the right side. Accompanied by chill, temperature of 39° C.; tender tympanitic abdomen, and uterine bleeding. Labor was induced and a putrid fœtus removed; intra-uterine injections of hot sterilized water were given and 10 cubic-centimetres of serum injected subcutaneously. The temperature declined to normal in three days; but the salpingitis was slow in resolving. The urine which was free from albumin before the seropathy continued to be non-albuminous after it. The rapid improvement which followed the emptying of the uterus can as well be attributed to that cause as to the seropathy.

Case III.—M. F., aged 29 years; VI-para, owing to a contracted pelvis had required instrumental delivery in her previous labors; after her fourth labor she developed a pyosalpingitis. She entered the hospital with a temperature of 38.5° C. in labor; after a protracted labor she was delivered by version and extraction of a healthy child. Ten cubic-centimetres of serum were injected immediately after delivery and the uterus washed out. Two days after her temperature had risen to 40.4° C., but her general condition was good. Ten cubic-centimetres of serum was given. The next day there was improvement, 10 c.c. more serum were injected. Defervescence followed rapidly. She left the hospital 28 days after in health. In this case the woman was already infected when labor began, in such cases we are defenceless and the serum treatment is our best reliance.

Case IV.—M. G., age 40 years; primipara; entered hospital bleeding from placenta previa marginalis at the seventh month of

pregnancy. After version and extraction of the child, a large sub-peritonæal fibroid was found capping the fundus, the placenta was removed without hemorrhage. The next day her temperature was 38.8° C., pulse 120, no chill. Ten cubic-centimetres of serum were injected. Two days later 10 c.c. more of serum were given as the temperature was "sub-febrile." Two days after the temperature was normal. Patient recovered rapidly. There was no albuminuria either before or after the injection of serum.

Case V.—M. R., aged 29 years; 4-para. Contracted pelvis, conjugata vera 10 centimetres, tedious labor at term with prolapse of the funis, delivery by high forceps. Slight chill the same night, temperature "not high" the next day. Ten cubic-centimetres serum were injected. The following day fever persisted (degrees not given). Ten cubic-centimetres more of serum were given. From this on the fever left her. The case demonstrates the value of sero-pathy in mild cases.

Case VI.—M. V., age 30 years; IV-para. Patient very anæmic. Labor pains began at 4 A. M., September 11, with rupture of membranes and persisted until 11 A. M. of the 12th, when forceps were applied, the cervical dilatation being the size of a silver quarter of a dollar; after four hours they were removed as the pain was too great. Twenty-three hours later she delivered herself of a live child weighing 3,100 grammes. Her temperature before delivery was 39° C.

Sept. 16. Severe chill and general distress. Intra-uterine douches of corrosive sublimate were given.

Sept. 18. No improvement, pulse 124, uterus tender, ulcerations of vulva and vagina; albuminuria. 20 c.c. of serum were injected.

Sept. 19. Defervescence of temperature. The albuminuria disappeared quickly. The chief features of this case are the early rupture of the membranes, very tedious labor and the advent of temperature before the termination of parturition. Sero-therapeutics exercises a favorable influence on such cases.

Case VII.—M. G., age 22 years; 3-para. Her first confinement, April, 1894, was complicated by a serious septicæmia from which she recovered. The child died of erysipelas of the trunk a few days after birth. Following the second confinement, July, 1895, there was a double phlebitis which kept her in bed three months. The third and last parturition, Dec. 5, 1896, was rapid except for a delay due

to the disengagement of the shoulders from a short funis, wound about the child's neck. The child weighed 4,250 grammes. During the next ten days the puerperium was normal. Dec. 15 a severe chill occurred, uterus tender, temperature elevated (degrees not given) pulse 108 good quality; tongue dry with sordes; urine very albuminous, for the first time. 10 c.c. of serum were injected. The temperature declined at once with but one exacerbation, viz., on the fifteenth day after delivery. Dec. 24 she left her bed, the albuminuria having disappeared. Inasmuch as this woman recovered from her first attack, in 1894, without sero-therapeutics too much cannot be claimed for the latter treatment, except that her last attack was overcome much sooner than the first.

Case VIII.—Mrs. B., age 28 years; primipara. Labor at full term began Dec. 11 (evening) and continued until Dec. 16, when seen by the writer; slight contraction of the pelvis was found, the cervix dilated to the size of a silver dollar; occipito-posterior presentation at the brim; temperature, 39.1° C. Manual dilatation of the cervix, followed by forceps, was performed. Delivery was followed by post-partum hemorrhage, which required hot intra-uterine douching and compression of the aorta. Dec. 16th, temperature, 38.9° C.; pulse "quickened," urine slightly albuminous. 10 c.c. serum injected.

Dec. 17. Temperature, 36.8° C.

Dec. 19. Higher temperature, lochia fetid, showing streptococci. 10 c.c. of serum injected. Temperature decreased with variations until Dec. 24th. Patient cured.

Case IX.—C. G., age 32 years; primipara. Normal labor at term, Feb. 12, 1897, with antiseptic care by midwife.

Feb. 17 (fifth day). Patient had a violent and prolonged chill, temperature 39.8° C.; pulse 120, abdomen prominent, no tympanites or tenderness; cervix dilated, no indication of retained products of conception. Urine non-albuminous.

Seventh day. Temperature, 41° C.

Eighth day. 10 c.c. serum injected, also same quantity injected on the ninth and ten days; after this the temperature declined to rise again on the fifteenth day, when 10 c.c. more of serum were injected. From this the temperature fell to the normal, and the patient recovered. In this case there was a rather serious form of septicæmia without any localization. In all 40 c.c. of serum were

injected from the seventh to the fifteenth days, apyrexia being complete on the sixteenth day after delivery.

Deaths (four cases). Case X.—H. R., age 26 years; 2-para. At her first confinement, February, 1894, she sustained severe laceration of the perinæum, causing procidentia uteri; November, 1894, perinæorrhaphy and "hysteropexia" were performed. Her second and last confinement, March 31, 1896, was normal except being rather tedious from rigidity of the perinæum, due to cicatricial tissue.

April 2. Chill during previous night, pulse 140 (temperature not given); 10 c.c. of serum injected.

April 3. Another chill, temperature 41° C., pulse 152, condition bad. 15 c.c. of serum injected.

April 4. Slight improvement. 15 c.c. of serum given.

April 7. Preceding days somewhat better. Temperature now 41° C., pulse 150; vomiting, insomnia and agitation. Vulvar and vaginal diphtheritic patches, no localization.

April 18. Fever persistent, eschar developed on the sacrum.

April 21. Superficial abscesses develop in different regions, containing streptococci to the exclusion of other germs.

June 3. Patient died from progressive marasmus. Autopsy revealed the uterus in complete involution, and the appendages healthy, no visceral abscesses.

This case occurred after a rapid delivery without interference, and was due exclusively to streptococci, death occurring two months after delivery from subcutaneous abscesses and bed sores, all fever having ceased two weeks before. All that sero-pathy did for this case, was to delay the fatal issue. During the first fortnight of the infection about 100 c.c. of anti-streptococcic serum was injected.

Case XI.—Mrs. X., age 32 years; VI-para. Previous confinements natural. Her last parturition occurred Nov. 15, 1896, under the care of a midwife, was speedy and normal. The puerperium was uneventful until Nov. 25, ten days after, when she had a chill followed by discomfort in the lower part of the abdomen. Another chill Nov. 30 with vomiting.

Dec. 3. She was first seen by the writer. Her abdomen was not tympanic or painful; the uterus was large and somewhat tender; pulse 148, weak and feeble, her heart was very weak, second

sound intensified; lungs negative. The liver was enlarged (no temperature given), 20 c.c. of serum injected.

Dec. 4. Temperature 41.1° C., pulse 140, violently delirious.

Dec. 5.—Same mental condition; pulse 144 and very weak; abdomen tympanitic.

Dec. 6. Patient died. No autopsy obtained.

Case XII.—M. F., age 33 years; II-para. After her first confinement, 14 years ago, she suffered with peritonitis for eight months in bed. The last labor at term, began Jan. 2, 1897, with rupture of the membranes without pains, labor pains began a few hours later and lasted until the evening of the next day, when forceps were applied; after prolonged traction delivery was accomplished with a partial laceration of the perinæum.

Jan. 5. Temperature 39° C., pulse 120.

Jan. 6. Chill during the preceeding night; temperature 39.4° C.; pulse 160; abdomen tympanitic and tender; hiccoughs; voice broken; great debility. Urine albuminous. 20 c.c. of serum injected. In the evening of the same day her condition was much worse. Pulse 176; respirations 52, rigor. 10 c.c. of serum injected.

Jan. 7. 10 A. M. patient died. Autopsy showed slight pleuritic effusion and pulmonary œdema; about 400 grammes of turbid fluid with fibrous exudate in the peritoneal cavity; intestinal vessels congested; slight infiltration of the broad ligaments; the uterus large but purulent.

In this case the former attack of peritonitis favored the septic conditions following this parturition. The anti-streptococcic serum could not overcome the virulence of the infection.

Case XIII.—Mrs. S., age 32 years; primipara. Labor at term began Feb. 2, 1897, by painless rupture of the membranes, labor progressed until the morning of Feb. 3, when forceps were applied, the cervix being fully dilated, and the foetal heart sounds feeble. The child weighed 3,500 grammes and easily resuscitated. Post-partum hemorrhage occurred which required utero-vaginal tamponing.

Feb. 6. Severe chills; pulse 156 (temperature not given). 10 c.c. of serum were injected.

Feb. 7. Pulse 132; "fever persists." Ice applied to the abdomen. In the evening chill and vomiting; abdomen tender. 20 c.c. of serum injected.

Feb. 8. Temperature 40.1° C.; pulse 152; tympanites marked.

Feb. 9. Pulse imperceptible, extremities cold. Died at 3 P. M.
No autopsy.

This patient succumbed to septicæmia notwithstanding the early use of the anti-streptococcic serum, twenty-four hours after delivery, before any serious symptoms had occurred. The rapidity of the pulse alone indicated the seriousness of her condition.

Deductions.—While it cannot be denied that in the series of nine favorable cases the anti-streptococcic serum had some efficacy as shown by the rapid decline of the fever, the improvement of the general condition, and the disappearance of all local lesions which followed so closely upon the use of the serum, especially in Cases III., V., VI., VII. and IX., yet in a disease so irregular in its course as puerperal septicæmia it is unsafe to thrust coincidences: for with an infection presenting the most varied features, the increase of temperature may be only temporary and yield to the simplest remedies, on the other hand, those forms which commence with a chill, depression, albuminuria, rapid pulse or high temperature are not always benign. With the exception of some rare specific measure, the criticism of *post hoc ergo propter hoc* may be applied to the results of any treatment of this disease.

The production of albuminuria and even death has been laid to the use of anti-streptococcic serum, as it has been to anti-diphtheritic serum. In none of the above cases nor in others where the serum had been given as a preventive measure after operative interference, was albuminuria seen, except when it had appeared before the employment of the serum. It should be remembered that puerperal septicæmia of itself provokes albuminuria. Nor has there been any reason to believe that the use of the serum has aggravated the course of the disease in any way, on the contrary in severe cases it has tended to delay the fatal issue. The only fault to be found with Marmorek's serum is that it fails to produce any favorable effect in very severe cases. The early use of the serum seems to possess no advantage over a tardy use, as seen by Case XIII., where the first injection was given twenty-four hours after delivery and before any chill or fever, a pulse of 156 being the only indication of danger. Why then does this anti-streptococcic serum whose preventive action is so evident in rabbits, have only a relative efficaciousness in man? J. Courmont in a recent publication says "that the great de-

fect of Marmorek's cultures resulted from the fact that the streptococcus which served as a point of departure for his different cultures, proceeded from a pseudo-membranous angina and not from an erysipelas, and therefore the serum resulting from inoculations made upon horses could have no efficaciousness on the latter disease." Courmont appears to be a believer in the plurality of streptococci. From a clinical standpoint we must look at the different chain-microbes found in man, either sick or well, as transformable races of the same species. Widal says, "by adapting itself to different kinds of life, the streptococcus is modified in its virulence and in some of its biological characters, but its modification is never sufficiently complete to border upon a veritable transformation." Pathogenic or not, the streptococcus of Widal forms only a single species of variable virulence. Daily observation shows it to be one of those germs which adapt themselves very quickly to their medium, and when it invades an organism, the gravity of the infection depends rather upon the soil than the germ itself. This is attested by many instances in daily practice, as a fatal infantile facial erysipelas contracted from a slight mammitis of the mother, or a fatal septicæmia in an operator resulting from a slight digital infection received while curetting a mild septic endometritis. On the contrary, the patient may die of a virulent septicæmia while the operator may receive but a trifling sore from accidental infection of his finger. Thus streptococci produce either a mild or fatal disease according to the qualities of the organism which receives them. This adaptability of the streptococci to the soil in which they thrive is the source to which we must look for an explanation of the failure of the anti-streptococcic serum we possess to combat erysipelas and puerperal fever. The origin of the streptococci is an important factor, but not the only one. Marmorek's process for intensifying the virulence of streptococci is well known; it consists in producing successive cultures in the organism of rabbits, until an extreme degree of virulence is reached; this is accomplished by the end of eight or ten months, a culture is then obtained which will kill a rabbit in doses of one thousand millionth of a cubic-centimetre. These cultures injected beneath the skin of a horse determine very slowly a progressive immunity to such a degree that the animal can support, without risk, after ten months enormous injections of the high virulency mentioned. When this is reached the serum of the

horse possesses a positive immunizing power for rabbits, because it is strictly a disease of rabbits which has served for its preparation in the horse. The question arises: does this happen in man? If the disease in rabbits were the same as it is in man, it would be probable that the serum of the horse so immunized would protect man also. But it seems that by passing through a special organism, the streptococcus gradually loses its initial pathogenic properties; while its virulence is increased for the animal, it diminishes gradually for the human medium. As a proof of this Coley treated 39 cases of inoperable sarcoma by means of a mixture of toxins of erysipelas and cultures of *bacillus prodigiosus*, and obtained the disappearance of the tumors in nine cases. Zimmerman and Scholl inoculated virulent cultures of streptococci taken directly from erysipelas on cancerous growths and noted improvement. The writer followed the indications given by the latter authors, by inoculating three cases of inoperable carcinoma with cultures of virulent streptococci taken from rabbits in order to provoke an erysipelatosus inflammation similar to that of Coley.

Case I.—Cancer of the tongue. Injection of 40 c.c. of serum in the course of four days. Following this the inoculation into the growth of a culture which killed a rabbit at the dose of one thousand millionth of a c.c. Result, *nil*.

Case II.—Epithelioma of the temporal region. One injection of 10 c.c. of serum. Two inoculations of virulent culture, same as before, into and around the growth. Effect, *negative*.

Case III.—Epithelioma of the cheek. No injections of serum given. Two inoculations of virulent culture into and around the growth. *No effect produced* on the growth, nor the least inflammation about the points of inoculation.

In the first two cases, injections were administered first in order to protect the patient from any undue effect of the inoculations to be given. The last case showed the uselessness of the precaution. J. Petruschky, of Koch's Laboratory in Berlin, arrived at the same conclusions as the writer. His experiments taught him that tentative inoculations in man of virulent cultures of streptococci are negative even after increase of their virulence by successive cultures in mice and rabbits; and that in proportion as the virulence of the streptococcus increased in rabbits, it decreased for man. From these researches we may conclude that while the cultures of strepto-

cocci in rabbits may protect rabbits, they by no means protect man. In the treatment of puerperal fever we should not neglect the local measures at our command so long as the infection is confined to the mucosa, but when the microbic colonies have passed beyond into the lymphatics, venous system or uterine muscle, local measures will avail us little, and they may in fact become hurtful. Dependence upon such measures is an illusion similar to that of those who expect to cure typhoid fever by intestinal antiseptics, or tuberculosis with bronchial remedies. In this condition of systemic infection, beyond the reach of local measures, anti-streptococcic serum is destined to render important service in the future. The aim of sero-therapeutics for the treatment of septicæmia should be to arrive at the positive results now obtained in the seropathy of diphtheria: there is every reason to believe that this problem is not insoluble.

GERMANY.

Report of an Unusual Case of Placenta Previa Centralis.

OTTO VON WEISS (*Centr. f. Gyn.*, June 5, 1897), reports a case of placenta previa centralis in which the placenta was firmly attached to the greater part of the cervical wall, and the cervical mucosa formed a part of the decidua serotina. The patient was thirty-three years old, a V-para; the first three labors were normal; in the fourth, three years previous, manual detachment of the placenta was required. Her last menstruation occurred the early part of November, 1895; from this date until January, 1896, she had frequent uterine hæmorrhages. June 1, 1896, she was first seen at the obstetrico-gynæcological section of the National Hospital of Serajevo and examined. She was found to be pregnant about the ninth month, the presentation being vertex, in the first position; the foetal head above the brim of the pelvis, the pelvis roomy, the anterior and posterior vaginal walls strongly prolapsed; the cervix soft and spongy. No endo-cervical examination was made. There was no hæmorrhage. She was advised to enter the hospital at once, but declined to do so. The next day she was suddenly seized with vomiting and an alarming hæmorrhage, which was partly controlled by a plug of cotton wadding introduced into the vagina by herself. She was brought to the hospital at once in an exsanguinated condition,

her clothing being saturated with blood. An iodoform gauze tampon was substituted for the cotton plug. When seen by the writer about two hours later, moderate bleeding occurred on the removal of the gauze tampon. Examination revealed the cervix dilated sufficiently to admit two fingers, the cervical canal filled with clots and placental tissue; the placenta was found to be firmly adherent to the cervix all around and centrally implanted. The foetal head was high above the brim. External podalic version was done, the placenta torn through and a foot grasped and drawn down. Profuse hæmorrhage occurred during the procedure, followed by syncope and great prostration; as the bleeding ceased the case was left to the natural powers of expulsion, the child having expired after the version. In an hour the foetus was expelled without hæmorrhage. Weight of child, 2,150 grammes. After repeated efforts at expression, followed by hæmorrhage each time, manual detachment of the placenta was attempted, great difficulty was encountered in separating the placenta from the uterine wall, it appearing to be one mass, only a small spot on the posterior wall being detachable. It was necessary to tear it off in shreds, and on the anterior wall it was impossible to wholly remove it. Careful measurements of the cervical walls showed the anterior wall to be disproportionately thick; this could be reduced only by "nipping" it off in small pieces. The tissue was hard like a fibrous tumor. The writer was obliged to desist owing to the low condition of the woman, no anæsthetic being used, before he felt sure that all the placenta was removed. The uterus was irrigated with a 2-per-cent. lysol solution, and packed with iodoform gauze. Stimulation, transfusion and heat were used to restore the patient, who rallied slowly. The second day her temperature was 37.1° C.; pulse, 138. The third day a chill occurred, followed by a temperature of 39° C.; pulse, 138; the abdomen was tender and streptococci were found in the lochia. Vaginal hysterectomy was done at noon the same day; the peritonæal cavity was left open, iodoform gauze inserted and the vagina packed with gauze. On the fifth day ten cubic centimeters of antistreptococcic serum were injected, as the genital secretion showed an abundance of streptococci. The sixth day the patient died. The autopsy disclosed acute general purulent peritonitis; acute phlegmonous parametritis of the right side and parenchymatous degeneration of the heart, liver and kidneys. Microscopic examination of the extir-

pated uterus showed an intimate union of the placenta with the cervical wall, especially on the anterior surface, which makes it probable that the ovum was implanted at that site very early. The proliferation of the placenta into the cervical mucosa is such a rare occurrence that the writer has been unable to find any mention of such a case. C. von Braun asserts that he has never seen the insertion of the placenta into the cervical mucosa, either in a parturient woman or a cadaver. Doranth, in a recent report of 216 cases of placenta previa in 30,796 parturitions in Chrobak's clinic, does not mention a single similar instance. The writer, in accounting for the septic poisoning of the case, feels sure that every aseptic precaution was taken in its management, and considers the cotton plug introduced by the woman herself as the only doubtful factor, bearing in mind the many unclean uses that common cotton is put to in households, such as the dressing of purulent wounds, whitlow, etc.

GREAT BRITAIN.

Ruptured Gestation in an Imperfect Uterine Horn (Uterus Bicornis Unicollis.)

Mr. TARGETT (*Trans. London Obstet. Soc.*, Vol. XXXIX., 1897) presented a specimen of ruptured gestation of the imperfect right cornu, where the foetal sac was connected with the cervix of the well-formed left cornu by a small rounded cord, which appeared to be traversed by a minute canal. This cord was three inches in length and represented the lower end of the right Müllerian duct. The evidence that the gestation sac was uterine and not tubal rested upon the facts, that the right round ligament took origin from it, and that there was a normal right broad ligament, with a Fallopian tube and ovarian ligament of ordinary length. The left cornu was lined with decidua, and its cervix plugged with mucus. Rupture of the sac was due to vomiting. The patient was twenty-four years of age and in the fifth month of gestation.

Dr. Griffith had carefully examined two similar specimens, with the view of identifying the Müllerian duct or any canal between the undeveloped horn containing the foetal sac and the developed one by microscopic sections of the septum uniting them. He failed, however, to find any trace in either specimen. He places no reliance

on a bristle for this purpose, as it may find a passage along bundles of muscle fibres, or along some vessel or nerve.

Walcher's Position in Labor.

G. H. MITCHELL (*British Med. Journal*, July 3, 1897) reports a case of difficult labor from moderate contraction of pelvis and projecting promontory of the sacrum, where Walcher's position was used with great benefit. The woman had been instrumentally delivered of a dead child two years previous. The writer was called to see her in this, her second labor, twenty-four hours after the membranes had ruptured. He found the cervix fully dilated, the head in the L. O. A. position, but above the pelvic brim. Chloroform was given and axis traction forceps applied in the left lateral position. Three separate and prolonged attempts were made to draw the head into the pelvis with more force than ordinary, but without success. The woman was then placed in Walcher's position; the buttocks were drawn down well over the edge of the bed, a pillow was placed under the back, so as to allow the feet and limbs to hang down without touching the floor, the whole weight of the limbs thus pulling the pelvis down and away from the sacrum. Forceps were then again applied and with far less traction the head passed the brim suddenly. Delivery was then accomplished with ease. The child survived. Measurements of the pelvis: i. s., 10 inches; i. c., 11 inches; ext. conj., $7\frac{1}{4}$; diag. conj., $4\frac{1}{4}$; estimated true conjugate, $3\frac{3}{4}$ inches.

Circumferences of child's head: oc. ment., $15\frac{1}{2}$ inches; oc. front, $14\frac{1}{4}$ inches; suboccip. breg., $13\frac{1}{2}$ inches.

The advantages of Walcher's position save the patient symphysiotomy or the dangers of craniotomy.

Anti-streptococcic Serum in the Treatment of Puerperal Fever.

J. F. L. WHITTINGDALE (*British Med. Journal*, July 3, 1897) reports two cases, one showing the value of serum treatment in puerperal septicæmia and the other its harmlessness when used in a case that proved to be scarlet fever. Case 1—A primipara aged twenty-seven years, delivered February 17, by forceps on account of rigidity of the perinæum, which was badly torn and sutured. February 18

slight rigors occurred, the next day (February 19) the temperature was 102.4° F., pulse 100, lochia scanty, ringing in the ears, some tympanites but no abdominal tenderness; bowels constipated. The bowels were freely moved by calomel and o-l. Ricini. February 20 the temperature reached 103° F., the perinæal wound was gaping and covered with a thin gray discharge. In the evening of February 21, ten cubic centimeters of Bullock's antistreptococcic serum was injected into the right buttock. The temperature fell in two hours from 103° to 102.8° F. The next morning the temperature was 101° F.; pulse, 108. As the supply of serum was exhausted, quinine was given, the temperature ranging from 101° to 102° F. until the morning of February 23, when ten cubic centimeters of serum was again injected. The temperature fell the next morning to normal and the wound began to heal. Free perspiration followed each injection of serum.

Case II was that of a II-para, who, twelve hours after delivery, had a severe chill, diarrhœa set in, and the temperature rose to 105° F., pulse 150. Suspecting the placental tissue might be retained she was curetted and a small piece of placenta removed. The next day, as the temperature was 102.8° F., ten cubic centimeters of anti-streptococcic serum were injected. The temperature still remained high and even rose higher, a scarlatinal rash appeared and the patient went through with scarlet fever and desquamated freely. No impression was made on the course of the fever by the injection of the serum.

Note on Two Unusual Complications of Midwifery.

J. B. PIKE (*Lancet*, July 3, 1897) was called October 2, 1896. to a multipara in labor. On examination, a tumor was found protruding from the anterior part of the vagina, which was about two inches long and one inch broad; of a plum color and had a consistency like dough; the tumor was covered with mucous membrane. Its nature and origin was obscure. After the bladder was emptied, the tumor was found to be continuous with the anterior lip of the cervix uteri. The head of the child was found above the pelvic brim and the pelvis somewhat narrowed." Forceps were applied under chloroform narcosis and the child delivered. It was then clearly established that the tumor was the anterior lip of the

cervix uteri elongated and œdematous. The swelling promptly subsided.

He also reports a case seen July 15, 1897, of a woman who had borne one child previously; where cicatricial tissue at the vaginal outlet was so extensive and firm that but one finger could be inserted, and that only to the second joint. Multiple incisions were made under chloroform, followed by manual dilatation until forceps could be applied.

Ruptured Interstitial Tubal Pregnancy Treated by Suture of the Fissure.

PETER TYTLER (*British Medical Journal*, June 12, 1897) reports the case of a woman aged thirty-one years, the mother of seven children, who was admitted to Ancoats Hospital, May 13, 1895, in a state of collapse from hæmorrhage. Previous to May 3 she had not menstruated for six weeks. On this date she was seized with severe pain in the lower part of the abdomen which lasted for a few hours, after which she was able to attend to her usual duties. A very scanty and dark menstrual flow followed this attack of pain. On May 8 she was again attacked with severe pain in the abdomen and became very cold. She remained in a state of collapse until the 13th, when she was sent to the hospital. On admission she was in severe collapse. Examination revealed a soft, rounded mass, low down in the abdomen on the right side. As she rallied it was decided to wait for further symptoms. On the 17th, owing to the return of serious symptoms, the writer opened the abdomen and found it full of dark clots which were removed; no active bleeding was present. A rent two inches in length was found in the fundus of the uterus on the right side, extending from the middle of the fundus to the origin of the right Fallopian tube. The right side of the fundus was twice the size of the other. The rent opened into a spherical cavity, filled with fibrin, which was removed, but revealed no trace of cyst wall or ovum. After removing the right tube and ovary and cleaning out the fundus, the rent in the uterine wall was closed with four sutures. The abdominal cavity was washed, and a drainage tube inserted and the abdomen closed. The patient made a good recovery, and was discharged July 2, with a small sinus at the site of the drainage tube.

This remained open for some months, discharging a suture now and then until the wound healed. Eight months later the patient had a severe attack of dysentery, and since then has more or less diarrhœa at every monthly period. Hysterectomy is the usual method of dealing with such cases. Mr. Bland Sutton mentions that he has heard of a case treated similar to that of the writer.

AUSTRALIA.

A Case of Ectopic Gestation.

J. E. ANDREW (*Australasian Med. Gaz.*, May 20, 1897) reports a case of ectopic gestation, not so much on account of its rarity, as to enforce the importance of immediate operation as soon as a diagnosis is made. Soon after midnight, Dr. Andrew was summoned to a patient whom he found in a state of collapse and suffering great abdominal pain. The history was largely obtained from the family. The patient had been married five months, had missed one period and the previous two had been scanty. There had been a little morning sickness a month ago, and slight enlargement of the mammary glands. A week before she had a little pain in the abdomen, but so slight as not to require medical advice. But at nine o'clock the previous evening she complained of a sudden pain about the navel, felt faint and vomited slightly. She went to bed, the pain increasing so that she screamed aloud. When seen a little after twelve, she looked as if dying. Extremities cold and clammy, pupils dilated, radial pulse absent, but the heart seemed to be doing fairly well. The abdomen was slightly distended and a little tender; there was dulness on each side and half way up to the umbilicus. The uterus was low in the vagina but not enlarged, nor was there any discharge; there was a feeling of fluid in Douglas' pouch. These conditions, together with the history, led to a diagnosis of ruptured tubal pregnancy. Dr. Anderson was summoned, with a view to removing the extra-uterine pregnancy, with the appendages on that side. He agreed as to the diagnosis, but after some discussion, it was agreed to wait until half-past eight to see if the patient would rally. A tenth of a grain of morphia was given hypodermically, iced cloths were placed on the abdomen, hot bottles were placed to her feet and legs, and a little brandy and water was ordered. At

'half-past eight she was, if anything, worse. A hypodermic of strychnia was given. At eleven o'clock she was anæsthetized. On opening the abdominal cavity, it was found to be filled with clotted blood and fluid. The left Fallopian tube was ruptured, and contained the fœtus in its unbroken membranes. The patient died before the operation was completed. She would, undoubtedly, have had a much better chance of living had the operation been performed ten hours sooner.

MEXICO.

Some Observations Regarding the Practice of Modern Obstetrics.

A. L. HERMOSA (*Gac. Med. de Mexico*, April, 1897) says that Pinard's successful results from symphysiotomy have induced him to formulate the following precepts: 1. Avoid artificial premature delivery. 2. Avoid the use of forceps, or any operation involving a struggle of the fœtal head against the bony resistance of the pelvis. 3. Absolutely avoid embryotomy of the living fœtus. 4. Practice temporary enlargement of the pelvis by symphysiotomy in all cases where the head is well directed, and where calculations show that a separation of not over seven centimeters will permit the passage of the fœtal head. 5. In cases of great contraction perform Cæsarian section (Porro's operation).

Hermosa thinks that in spite of the readiness with which Pinard's rules have been received it is wrong to abandon the induction of premature labor in many cases, especially since the use of incubators has enabled the lives of many premature infants to be saved. With proper antiseptic precautions, it is too valuable an aid to obstetrical practice to be altogether abandoned. There are two indications which, in the opinion of the most prominent obstetricians, point to the necessity of premature induction of labor. The first can be met by no other method of treatment. In all cases in which the mother is attacked by diseases which are aggravated by pregnancy and which threaten either her life or that of the fœtus, the pregnancy must be interrupted. The other indication, viz.: slight pelvic constriction, is the one on which opinions differ as to the best method to be employed. Pinard, Tarnier and others resort systematically to symphysiotomy, defending their practice on the ground

that it is more favorable to the child. But that this position is hardly tenable is shown by Pinard's statistics; out of forty-nine symphysiotomies performed from 1892 to 1894 four women and five children died. In considering the subject the degrees of contraction may be divided into three classes, the first where the smallest diameter is above seventy-five millimeters. If called in due time to such a case careful measurements should be made, the relation between the size of the foetal head and the pelvis carefully noted, also the degree of ossification of the foetal head. The history of previous pregnancies must also be considered if the patient is a multipara. Repeated examinations should be made after the beginning of the eighth month to show the most favorable time for the interruption of the pregnancy. With proper care of the child there is much less danger than from symphysiotomy. In the second degree of contraction, from seventy-five to sixty-eight millimeters, symphysiotomy may be resorted to, but not till it has been demonstrated that the use of forceps will not be availing. Even with this degree of contraction nature will sometimes expel the foetus without further interference. The third degree of contraction, where the diameter is below sixty-eight millimeters, admits of only one course of action, viz.: Cæsarian section. Pinard's third precept has long been held and practiced by all obstetricians.

Hermosa formulates the following propositions: 1. Induction of premature delivery should not be abandoned. 2. Symphysiotomy should be performed when clearly indicated. 3. In all cases where careful measurements give any hope of successful extraction of the child by forceps or version, operative procedures should not be attempted until other methods have failed. 4. Embryotomy upon the living foetus has disappeared from rational obstetrics. 5. Cæsarian section should be used in cases of severe contraction. 6. Asepsis should be carefully observed.

(T. W. CLEVELAND, NEW YORK.)

PÆDIATRICS.

UNITED STATES.

Ear Diseases in Children as Compared with Adults.

P. McBRIDE (*Pædiatrics*, June 15, 1897) classifies aural diseases as those (1) of the meatus, (2) of the middle-ear, (3) of the labyrinth and auditory nerve. Inflammation of the meatus, the so-called otitis externa diffusa of several writers, may occur in both adults and children as a result of injury, as an extension of an eczema, or as a complication of the infectious diseases. In adults it often depends upon furuncles, but these are exceedingly rare in the auditory canals of children; as a primary affection it must be very uncommon, careful examination nearly always revealing that the pus comes from a perforation into the middle ear. Eczema confined to the auditory canal is rare in children; but an eczema may often extend into the ear, or be set up by a flow of pus from the middle ear. Otomycosis and impacted wax are less common in children than in adults, while foreign bodies are of course more frequent in the former. Tumors of the meatus are rare in children, and, with the exception of exostoses, somewhat so in adults. Apparent polypi are almost always found to be granulation tissue growing from the margins of a sinus, indicating a mastoid abscess that has burst into the middle ear and co-existing middle-ear suppuration; these apparent polypi are equally frequent in adults and children.

In the middle ear we may have (1) acute inflammation, (2) chronic suppuration, or (3) chronic non-suppurative inflammation. The first cases we may divide into mild and severe better than into catarrhal and suppurative. Both forms are frequent in childhood; the mild form is more common in children than in adults, the pain coming on toward evening and abating with the flow of a yellow liquid from the ear, while on the following day we may find a hæmorrhagic spot on the membrane indicating the site of a small puncture. The severe type is frequent in children in the course of the infectious diseases; but as a primary disease, except during the first few months of life, is rarer than in adults. In very young infants

it is not uncommon to observe fretfulness and irritability from no apparent cause, relieved by a flow of pus from the ear; but if we observe these cases we shall note that the child tends to carry the hand to the ear, that it cries on being rocked, that sudden pressure on the tragus is painful, and that the membrane, on examination gives evidence of the disease. Whenever older children give a history pointing to attacks of middle-ear disease, we shall often find an hypertrophied pharyngeal tonsil, removal of which will cause the attacks to cease. If neglected, the result will often be chronic middle-ear suppuration. This does not differ from the same condition in the adult except perhaps in less risk of head complications and a greater tendency to mastoid abscess. Many of these chronic middle-ear suppurations have been shown to be tubercular, but whether primarily or secondarily so we cannot always say. Regarding chronic middle-ear deafness with imperforate membrane, this condition in adults is usually associated with middle-ear thickening and partial Eustachian obstruction, or with ankylosis of the ossicles without involvement of the Eustachian tube, while pure Eustachian obstruction and serous catarrh are rare. In children, however, we frequently meet with an uncomplicated Eustachian obstruction, occasionally with a serous catarrh secondary to Eustachian obstruction, and rarely with middle-ear thickening. Therefore the prognosis of this condition in the child is much more favorable than in the adult. The simple Eustachian obstruction generally depends on the presence of adenoids in the naso-pharynx. There are also cases of inherited syphilis in which the tympanic membrane is thickened and the Eustachian tube often impervious. In these deafness is very marked and unrelieved by the use of Politzer's bag, bone conduction is poor and the prognosis is bad.

In the suppurative inflammation of the middle-ear in infectious diseases the labyrinth may also become involved, with complete deafness as a result. The prognosis is not hopeless, however, as sometimes hearing is partially regained, there probably having occurred only an intense congestion of the labyrinth. Meningitis is very fatal to the nerve apparatus of the ear, and a history of a mild attack of this disease may be obtained in many a case of deaf-mutism. Also in cases of sudden deafness in children we must remember the possibility of a traumatic cause.

Regarding differences in symptomatology, we note that children

very rarely complain of tinnitus aurium; also that while adults are very prone to giddiness from middle-ear catarrh or even from wax in the meatus, children rarely lose the power of maintaining their equilibrium as a result of ear disease, except with grave lesions of the labyrinth of which the prognosis is commonly hopeless.

The Importance of the Exact Correction of Refractive Errors in School Children.

W. M. D'A. CARHART (*New York Med. Jour.*, June 12, 1897), ascribes the increased wearing of glasses by adults and children to two causes: the first is that many more refractive errors are now recognized and corrected than formerly, both because we have better instruments, particularly the Javal ophthalmometer, and because the profession at large is better informed in ophthalmology; the second cause is that we all do much more close work with our eyes than did our ancestors. Very much more is required of school children nowadays; and while healthy eyes may be astonishingly overworked with impunity, the strain is too great for those that are the subjects of refractive errors or of some local or constitutional disease.

Apparently the modern eye is passing through a period of adaptation; for savages are far-sighted, and infants are now born hypermetropic—a matter of atavism. Modern man uses his eyes on things that are near; and continual application to close work, especially during childhood, causes congestion of the organ and later a yielding of its structure; this yielding at the posterior pole causes a lengthening of the optic axis, and at the anterior surface astigmatism due to alteration of the corneal curve. For us, the myopia is in itself an advantage over the primitive hypermetropia, but being due to congestion is very likely to be a progressive pathological process; while the astigmatism is an unmixed evil. We can not say whether extreme myopia is to be the destiny of the race, but if we are to be saved it will only be by preventing in children the evils that we can only palliate in adults. While it is well known that myopia and myopic astigmatism tend to rapid increase, it has only recently been demonstrated that hypermetropia and hypermetropic astigmatism are not fixed, so slow at first is the change from hypermetropia to emmetropia and then to myopia. If, when the eyeball is still hypermetropic and the degree of astigmatism is not great, we prevent the

abuse of the eyes and correct promptly refractive errors, we shall anticipate the harmful congestion and distension that lead to high refractive error. The process of distension is of course much more rapid in eyes that are weakened by local or constitutional disease.

The author has examined the eyes of one thousand school children, and was much impressed by the numerous cases of blepharitis and of asthenopia in children with refractive errors that wore none or improper glasses, and this is a more serious matter in children than even in adults, because children are both more tolerant of improper glasses and more harmed by them. Too great protest can not be made against the practice of ophthalmology, the examination of eyes and the fitting of glasses by comparatively unskilled persons; the present law which makes a regents' certificate necessary to practice medicine in this state covers the case; but the attempt, defeated this year, to make an exception in the matter of so-called optometry will probably be renewed again.

The Specific Use of Diphtheria-Antitoxin in Laryngeal Diphtheria.

E. ROSENTHAL (*Virginia Med. Semi-Monthly*, July 9, 1897) considers laryngeal diphtheria under two heads: the primary form which used to be known as membranous croup, and the secondary variety which is an extension of a tonsillar or nasal diphtheria. He remarks the very great diminution in the mortality of the former since its early recognition and specific treatment have become possible. If primary laryngeal diphtheria be taken early one injection of antitoxin will effect a cure, and no other medication will be needed; certainly two injections will be sufficient. For a child of two years the first dose should be 2,000 units; for a child under that age, 1,000 units. In secondary laryngeal diphtheria, on the other hand, antitoxin needs to be supplemented by other medication, particularly stimulants, and frequently by intubation. The antitoxin must be used freely and persistently. In one case in which the visible membrane disappeared in six days under the old form of treatment, invasion of the larynx then occurred, necessitating intubation, and, during the following twenty days, sixteen injections of antitoxin were given, amounting in all to 16,500 units. Out of a total number of forty-eight cases treated with antitoxin during the

past year by the author, seven died; twenty-three required intubation, of whom six died; twenty-five were not intubated, and of these one died. When used in laryngeal diphtheria, antitoxin should be repeated in twelve hours, and in double or at least the same quantity as the initial dose. We must remember the limitations of antitoxin, for if the membrane be formed in great quantity or the spasm be marked, suffocation may occur before the antitoxin has time to act; the separation of the membrane may also cause suffocation. Therefore in all cases in which there is any indication for intubation the operation should be done early.

The Microscopic Examination of Milk.

W. R. STOKES and A. WEGEFARTH (*Med. News*, July 10, 1897) remark that the microscope is of great service in detecting the contamination of milk with pus, its presence usually pointing to the existence of some inflammatory condition of the cow's teats or udder. This disease is known as garget, and is caused by some local injury with secondary bacterial invasion; and the milk will contain both pus cells and the bacteria which have produced them. Purulent inflammation of the milk ducts may also occur, the infection arising from the sore finger of a milker, and being transferred in milking from one cow to another. Milk that contains a few pus cells, however, should not be hastily condemned. The method of examination at the Health Department of Baltimore is as follows: Ten cubic centimeters are centrifugalized for two and a half minutes, the supernatant liquid poured off, and the sediment spread over a glass slide. The latter is then dried, the fat removed by ether, and the slide stained with methylene blue and examined with a one-fifth oil immersion lens. Most samples of milk from large herds will contain a few pus cells.

There is evidence to show that such bacteria are capable of setting up a gastro-enteritis. In a number of cases Booker has found the streptococcus in cultures from the intestines and has demonstrated these bacteria in the various inflammatory lesions of the intestine. At one of the educational institutions of Baltimore twenty of the inmates were attacked by nausea, vomiting and purging. The milk was thought to be at fault and the herd from which the milk was supplied was visited. One cow was found to have an elevated

temperature and a swollen and tender udder with a slight abrasion thereon. The teat was cleaned and a thick yellow fluid squeezed from it into a sterile tube, which proved to consist of pus cells, together with numerous streptococci; a plate culture gave a pure growth of the streptococcus pyogenes. Separate specimens from a number of the cows were examined and mostly found to be free from pus cells, but a specimen of the mixed milk of the herd showed many pus cells and streptococci.

This led to the consideration that the milk of many individual cows must contain varying numbers of pus cells. In order to estimate the number of cows free from pus and the variation in the number of pus cells in the milk of cows kept under various conditions, a series of investigations were undertaken upon three grades of animals. Grade No. 1 consisted of one hundred cows kept in the country under the best conditions of pasturage, food, cleanliness, veterinary care and cleanly milking. Grade No. 2 consisted of fifty cows kept in the country but under bad sanitary conditions, fed on distillery grains, bran and cut hay, and milked without precautions for cleanliness. Grade No. 3 consisted of one hundred cows kept in the city and under the worst conditions. In the investigation the teats were first carefully washed and the first milking from each of the four drawn into sterile tubes. The specimens were then examined as above, the averages being based upon the counts of ten microscopic fields and representing the average number of pus cells in each field. Grade No. 1 gave an average of 1.1 pus cells to the field, No. 2 an average of 11.3, and No. 3 of 19.3. No pus organisms were found in the specimens from herd No. 1, while streptococci were found in large numbers in eight instances from herd No. 3. Ninety-three cows of grade No. 1 gave an average of less than 5 cells to the field, while of grade No. 3 only 38 showed such an average. We conclude therefore that garget is not infrequent, and that the milk from cows thus affected contains pus organisms and cells; that such milk can cause gastro-enteritis; that if milk is found to contain an excessive amount of pus the herd should be inspected, a microscopic examination of a specimen from each cow being made, and those cows being excluded whose milk is found to contain an excessive amount of pus; an average of more than five pus cells to the field of a one-twelfth oil immersion lens should cause the animal to be excluded. It is also evident that the

milk of cows kept under such conditions as those of Grade No. 1 is much less likely to cause disease; and it is proper that the care of herds should be regulated in detail by legislation.

Report of a Case of Congenital Absence of Anus and Rectum.

M. S. WOODMAN (*Atlantic Med. Weekly*, July 24, 1897) in describing the above case, says that the mother during pregnancy had been very constipated and had suffered from an intense desire to go to stool and to strain. Labor was tedious and the child finally delivered with forceps. The umbilical cord was very short and the placenta adherent. The child would not nurse, but vomited frequently what appeared to be mucus. On the day following delivery a soap suppository was ordered for the child when it was found that there was no anus, in fact no sulcus between the buttocks; small amounts of meconium and gas were passed through the urethra, and the penis was large, erect and in constant motion. An incision was made at the point where the anus should have been, and on continuing it well within the tip of the coccyx, about two inches from the surface, bulging could be felt with the child's constant straining. Puncture of the gut was followed by the escape of meconium, gas and urine. The bladder was found beneath the gut, communicating with it by a fistulous opening. The gut was dissected away, drawn down and stitched to the muscle just inside the skin; after which no gas or meconium escaped through the penis; urine, however, was passed with the fæces. A catheter could be passed through the urethra and out at the artificial anus. The gut was kept open for a few days by a hard rubber tube, and later by plugs of cotton.

Three months later, after a slight diarrhœa, the child's bowels ceased to move, and on examination it was found that a probe could be passed only an inch inside the bowel, while fæces, gas and urine were oozing from the penis. The obstruction seemed to be cicatricial tissue, and after incising this there was a plentiful discharge from the bowel. The former discharge seemed to have come through two fistulous passages, one on each side of the incision; the bladder was in the place that should have been occupied by the rectum; within the occluding membrane was a pouch through which a sound could be passed into the bladder and out

through the penis. For two weeks a glass tube was kept in the incision; after this time it could not be replaced, a sphincter having been formed. This sphincter had to be dilated several times, but now acts perfectly. Urine is occasionally passed through the rectum, but the child is apparently healthy.

Ætiology and Treatment of Diphtheria.

J. C. McCANDLESS (*Charlotte Med. Jour.*, July, 1897) says that there are so many typical cases of diphtheria in which we fail to find the Klebs-Loeffler bacillus that we cannot consider that the disease is caused by that germ or that its presence is necessary to establish the diagnosis. We can connect defective plumbing with the disease in more cases than the bacillus; and the former, together with lowered vitality and a septic condition of the mouth, throat and stomach is cause enough. The false membrane is like the fibrinous wall of an abscess cavity, and serves to prevent the absorption of septic material; it cannot by itself cause death except mechanically. The fact that the Klebs-Loeffler bacillus and other germs that are found on its surface are not found in either the blood or the tissues shows that these germs have in the septic mucous membrane a suitable soil and do not seek pabulum in the healthy tissues. If no other germs than the Klebs-Loeffler were found in the membrane we might consider the latter characteristic of the disease, but even then we should not be justified in injecting in the healthy tissues toxic agents; and even if the germs were in the tissues we should not employ antitoxin; for antitoxin, if it destroy germs, must destroy bioplasm and lower vitality, on which recovery depends.

We find the disease due to filth and defective plumbing, but not less to predisposition of the subject from lowered vitality, retained excretions, and an overloaded and septic alimentary canal. In diphtheria the stomach and bowels are never in a normal condition, and this is shown by the beneficial effect of emesis. The characteristic odor is evidence of a septic condition, and therefore antiseptic treatment is in order. Antiseptics are defined as agents that render the material with which they come in contact unsuited to germ development; poisons, then, are germicides but not true antiseptics, for the reason that they destroy bioplasm and lower vitality, thus rendering the tissues more rather than less suitable for germ devel-

opment. To render the alimentary canal really aseptic an emetic is the first indication; we should use a strong stimulating astringent in a quantity of warm water, followed by nauseants, and later by frequent antiseptic medication. As an emetic the author uses a combination of myrica cerifera, hemlock bark, ginger, capsicum and sanguinaria; after a sufficient quantity of this has been drunk, fluid extract of lobelia and bicarbonate of soda are administered in warm water.

"This," the author remarks with evident pride, "will generally secure emesis." It seems not unlikely. After the emetic podophyllin should be given—one grain to an adult—and such antiseptics as myrrh, baltisia, eucalyptus and capsicum may be administered every hour; borolyptol or listerine may be useful. It may be necessary to repeat the emetic on the second or third day. If the case be one of membranous laryngitis, it is only necessary to give the emetic oftener and to add more lobelia. The foregoing treatment will obviate tracheotomy and forestall most of the complications and sequelæ, including death.

The author says that he anticipates considerable scepticism in regard to this paper; and we think that his anticipation will be realized, except touching the matter of the security of emesis under his treatment; his confidence in that, we feel sure, the public will hasten to share with him.

AUSTRO-HUNGARY.

Separation of the Linea Alba in Children With Symptoms of Incarceration.

K. BUDINGER (*Wiener Klin. Wochenschr.*, May 27, 1897) remarks the frequency of separation of the straight abdominal muscles in children of both sexes. The same thing occurs in adults and when of traumatic origin may be in various situations; but the acquired, non-traumatic form, such as is found in women that have borne several children, though it may extend above the umbilicus, involves by preference the lower part of the abdomen. In children, however, the separation is from the xiphoid process to the umbilicus or slightly below the latter; the muscles do not meet in the median line but are inserted into the costal arches at some distance from it, the gap thus

assuming a rhomboid outline; coexistence of an umbilical hernia is not necessary. Such a separation is congenital, due to retarded closure of the deeper layers of the abdominal wall. This condition may lead to very serious and typical symptoms, as the following cases bear witness.

A boy, six and a half years old, had been in excellent health till one and a half years ago when he began to refuse certain kinds of food, particularly bread, potatoes and vegetables; he became emaciated and was disinclined to play; oftentimes in the midst of playing or running he would stand still, bend forward and press his hands against his stomach, and at such times would turn pale and complain afterwards of cardialgia; finally these attacks became more frequent and he could take no solid food without violent pain in the stomach. Examination showed a separation of the abdominal muscles from the costal arch to the umbilicus, two fingers' breadth above and about half that width below. There was no umbilical hernia, and below the umbilicus the gap was closed by a strong sinewy strip; on sitting up, that is, on stretching the muscles, the abdominal contents protruded markedly into the gap between the muscles. Treatment consisted in covering the front of the abdomen, as far as the fissure extended with strips of plaster of a finger's width, overlapping each other like tiles. No further attacks occurred, and after two or three days the patient began to take solid food, and has continued to improve steadily. The history, physical examination, treatment and result in Case No. 2, a boy of seven years, are almost identical with those of the foregoing. The third case, a boy, nine years old, gave a history of a fall from a ladder two months previous, after which he had severe pain the region of the umbilicus and upper abdomen. This pain had continued and was increased by eating or violent exertion, but relieved in part by drawing in the abdomen and leaning the upper part of the body forward. On examination, a separation of the recti was made out, extending from the costal arch to a little below the umbilicus where the muscles gradually came together; the umbilicus was closed, and there was no hernia. The same treatment was adopted as before, with equally good results. A fourth case, five years old, had suffered for a year, eating less and less, and taking no solid food except a little bread; pain came on after eating, and vomiting if any attempt was made to make him eat more than he wished. He suffered

from the same attacks as the other if he exercised, which he controlled in the same way; he finally had to remain much in bed, the pains disappearing with the dorsal decubitus but recurring on rising. Examination showed the same conditions as in the other cases, and the same treatment was followed by the same favorable result.

Although true herniæ of the linea alba have received due attention, the author finds no mention of this condition of separation of the linea alba. He nevertheless considers it not much rarer in young children than umbilical hernia. Often it gives rise to no very serious trouble; often, also, it is doubtless unrecognized, the children being treated for gastric catarrh until a spontaneous cure takes place.

The symptoms resemble closely those of epigastric hernia in which condition it was supposed, from the pain and sense of fullness after eating, that the stomach was contained in the hernia; autopsies have proved that this supposition was incorrect, the hernial pouch being found empty or containing only rete cords and portions of intestine; and that the symptoms must be secondary, either due to tension or of a reflex nature. In our cases, however, it seems probable from the size and situation of the fissure that parts of the stomach may protrude between the separated recti; and that this occurs seems the more likely from the disinclination of the patients towards solid food or that liable to cause flatulence, though it is possible that the pain is caused merely by other organs being pressed into the gap by the distended stomach. In all these cases the symptoms seem to have been really those of incarceration; the pain and pallor must have been due to constriction of the abdominal organs, for we cannot expect adhesions in so young and healthy subjects.

Herniæ of the linea alba are supposed to be due to trauma and not, like other herniæ, to local predisposition; but there seems to be no reasonable ground for excluding retarded closure of the linea alba as a predisposing cause. In cases like the above, when closure does take place it is not unlikely that there may remain points of least resistance which will afterwards be the seats of herniæ; moreover should a portion of the intestine or the omentum be repeatedly constricted or inflamed, an adhesion may form between it and the peritonæal covering of the gap, which will afterwards favor the development of a hernia at that point.

Treatment is not required if the condition be not troublesome; and operation is probably never necessary, the measures adopted in these cases being sufficient.

GERMANY.

Contracted Kidney in Childhood.

BERNHARD (*Deutsche Med. Wochenschr.*, May 27, 1897) gives a résumé of the different views concerning the origin of contracted kidney; he himself believes that it may be an original process. In favor of this opinion he instances the nephritis of scarlatina, which, in distinction from that of diphtheria, may be a purely interstitial process; in both cases we may assume that the poison of the disease is the specific cause, acting differently in the different diseases. The author agrees with Ziegler that granular atrophy is primarily due to obliteration of the glomeruli consequent upon circulatory disturbances; there is added atrophy of the corresponding urinary canaliculi, and infiltration and hyperplasia of the renal connective tissue. Naturally where the circulatory disturbances are dependent on sclerosis of the arteries, the results are the most serious. This obliteration of the glomeruli may also occur in acute renal inflammation, and the author has found in post-mortems localized contractions which he regards as the evidences of past attacks of nephritis. Of generally-contracted kidney in children the following two cases are reported:

Case I. was a boy, fourteen years old, whose mother had died of phthisis, and who had himself been always thin and suffered from digestive troubles and from cough; his face was prematurely aged and his skin brown and dry. The lungs showed signs of tuberculosis; the heart sounds were clear, the second aortic being much exaggerated. The urine showed a moderate quantity of albumen and the diazo-reaction; and microscopically, red-blood corpuscles, leucocytes, hyaline casts partly covered with epithelium, and free-kidney epithelium. Eight days before death and a month and a half after the first examination the signs of tuberculosis had markedly increased, an ulcer had formed on the right tonsil, and tubercle bacilli were numerous in the sputum; the urine remained unchanged, from 1,010 to 1,200 c. c. being passed daily. On post-mortem,

phthisis of both lungs was found, and tubercular ulcers of the pharynx and larynx; the heart was not hypertrophied; the left kidney measured 9 by 5 by $2\frac{1}{2}$ centimetres; it appeared marbled with red and yellow spots; on section, the cortex was found somewhat widened, and the markings were obliterated in some places; it was otherwise normal. The right kidney measured 6 by $3\frac{1}{2}$ by $\frac{1}{2}$ centimeters; the capsule was firm and adherent, and the surface granular; on section both cortex and medullary portions were found narrowed, and the line of demarcation largely obliterated, as were also many of the markings, while the pelvis was very wide; there was no amyloid reaction. Microscopical examination of the left kidney showed considerable degeneration of the epithelium, particularly of the convoluted tubules, and some degeneration of the glomeruli with a few small-celled infiltrations about them. In the right kidney many of the glomeruli were obliterated and surrounded with compact concentric rings; many of the tufts were denuded of epithelium, and themselves or the entire glomeruli filled with blood; some of the convoluted tubules were normal, others were denuded of epithelium and dilated, while still others were denuded and their walls pressed together so that complete obliteration resulted; much of the inter-tubular connective tissue was thickened and fibrous and in places infiltrated with round cells; there was endarteritis and much thickening of the adventitia of the blood vessels.

We find three causes productive of the condition: the tuberculous poison explains the lesions of the parenchyma, such changes being frequent in tuberculosis, while interstitial ones are very rare; both processes would be favored by the anæmia secondary to the tuberculosis, the lack of oxygen causing degeneration of the tubules as well as defective nutrition and consequent atrophy of the glomeruli. The third cause is the renal stasis, due also to the pulmonary affection, which would cause damage to the glomeruli or their obliteration, atrophy of the corresponding tubules and contractions.

Case II. was a boy three years old who died of measles; the autopsy showed thrombosis of the longitudinal sinus, hæmorrhagic lepto-meningitis, double catarrhal pneumonia, bronchitis, fatty myocarditis and parenchymatous hepatitis. The right kidney was enlarged and some of the calices contained calculi; the left kidney was scarcely a quarter the size of the right, the capsule was adherent, the cortex narrowed, the papillæ flattened and the pelvis dilated. On

microscopical examination the right kidney showed only slight parenchymatous changes, while the left presented a typical interstitial nephritis, with extensive development of connective tissue and obliteration of the glomeruli, peri-arteritis and endarteritis. The bundles of connective tissue appeared to originate in the pelvis and run toward the surface; probably there had been calculi in this organ also, which had caused a pyelitis and ascending nephritis, and finally contraction.

The author cites another case in which a clinical diagnosis of contracted kidney could be made, together with a probable one of amyloid degeneration; it was a boy seven years old with hereditary syphilis; the quantity of urine varied between 1,000 and 1,600 gm.; the color was light, the sp. gr. from 1.005 to 1.008, and albumin was generally abundant; there was no cardiac hypertrophy, but the second sound was accentuated; there was enlargement of the spleen and liver.

The clinical history of contracted kidney in children differs little from the same in adults, but albuminuric retinitis is seldom met with, and asthmatic attacks have not been observed. Regarding ætiology, alcohol, lead and uric acid can seldom be assigned in childhood; atheroma of the vessels may be a cause; syphilis has much, and heredity some influence. These causes for the most part, and therefore the disease, are very infrequent in infancy; at that age we have to consider it only so far as the initial symptoms may then be noted of what may develop in adolescence. To discover these initial symptoms, however, is of the greatest importance because we may hope then to influence the disease therapeutically; here we must consider the nephritis that follows the infectious diseases, and the author notes several such cases in which there was paroxysmal albuminuria and one in which the albuminuria was persistent, without disturbance of the general health; these cases show that it is easy to overlook such a nephritis at the most important time—its inception, and emphasizes the necessity of examining the urine several times daily for a number of weeks after infectious diseases.

ITALY.

A. MUGGIA (*Gaz. Med. di Torino*, June 10, 1897) says that contrary to the former opinion that asthma is exclusively a disease of

adults, it is now known to occur in children of both sexes and of all ages, though it is somewhat difficult of diagnosis. We may classify infantile asthma as (1) ganglionic, (2) reflex or nervous, and (3) and essential, catarrhal or bronchial. Ganglionic asthma is connected with bronchial adenopathy, which may be congestive, inflammatory or tubercular, and which may follow any slight or serious disease of the intra-thoracic organs. The symptoms of ganglionic asthma may not differ from those of the bronchial form; but between the attacks there will be the symptoms of bronchial adenopathy, the characteristic cough, laryngeal and nasal phenomena, perhaps enlarged cervical glands; possibly the enlarged bronchial glands can be demonstrated by percussion. Of course ganglionic asthma does not occur in all cases of bronchial adenopathy; but in all cases of true ganglionic asthma we find, though perhaps it is but slight, adenopathy. We must not confound ganglionic asthma with the marked expiratory murmur without dyspnoea, due to cranial rachitis. There seems to be a greater predisposition in the masculine sex to ganglionic asthma; it occurs at all ages, even in the newly-born, when it may depend on a tracheo-bronchitis or a slight cold, and after a few months disappear; but its prognosis is often serious, from the frequency with which it is connected with tuberculosis of the bronchial glands.

Reflex and bronchial asthma are so much alike in their symptomatology that what is said of one applies to the other. The reflexes that may provoke the nervous form are of the most varied kinds, almost any kind of irritation serving to precipitate an attack. Bronchial asthma is often described in children as it occurs in adults; usually, however, the seizure is atypical, fever taking the place of the spasm. The attack is somewhat as follows: After customary good health the child suddenly awakes in profound disturbance, with cold perspiration and vomiting; the temperature rises to perhaps 39° C., paroxysmal cough comes on, and the breathing grows short, rapid and noisy; auscultation shows congestion with abundant secretion, respiration being blowing with numerous sibilant and other râles; but no consolidation. On the third or fourth day the fever drops, the respiration improves, and convalescence is established. There may even be delirium at the outset. At first the diagnosis is of indigestion, later of bronchitis or abortive pneumonia; and the correct diagnosis may not be made till two or three

such attacks have occurred during, perhaps, the course of a year. Gradually as the child grows older the attacks come to behave like those of adult asthma, and spasm takes the place of the febrile movement. Perhaps no disease so closely simulates this infantile asthma, especially in a nervous child, as influenza.

What the author calls "torpid" asthma is sometimes observed in children of the lymphatic temperament, without much vivacity or nervous excitability. In these cases there is seldom fever, and the dyspnœa and signs of bronchial catarrh are not marked. A case is noted in a child two years old in whom the attacks occurred during the winter as often as once in twenty days. There was some dyspnœa and bronchial catarrh, worse at night; there was no fever, but sometimes the attacks began with vomiting. Examination showed the child to be fat, pale and of a quiet disposition, but was otherwise negative between the attacks; during the paroxysms there was a mucous flow from the nose, dyspnœa, prolonged respiration and short cough with the signs of slight bronchial catarrh. The sputum showed neither the characteristic crystals nor Curschmann's spirals. Three months' treatment with iodide of iron and sea-water baths caused marked improvement.

Infantile asthma is in general more benign than the adult form, and does not usually last beyond puberty. But in some cases it may be replaced by other nerve disturbances or leave behind a susceptibility to bronchial and pulmonary disease. Moreover, during the paroxysm itself a true broncho-pneumonia may be set up, to be followed by a serous or purulent pleural effusion; and a case is quoted of a child seven years old that had suffered from asthma for three years, in whom pneumonia and afterwards empyæmia developed. The prognosis of these cases should therefore be somewhat cautious.

Regarding ætiology, Brissaud considers asthma to be a plain neurosis, but most authors hold that it depends upon a permanent spasm of the muscles of the terminal bronchioles. We know at least that it may be caused reflexly by the most varied conditions, and that the paroxysm nearly always begins with tumefaction of the inferior turbinated bone though there is no apparent nasal alteration; and since in cases of emphysema without nasal alteration bronchial spasm is frequent, Huhe considers that the bronchial mucosa causes a reflex irritation of the turbinated bones, where then, the paroxysm is produced. Heredity must be admitted as a cause; also

previous pulmonary affections that have acted in such a way as to damage the elastic tissue of the lung.

The treatment must depend on the cause and on the individual. In ganglionic asthma, especially if produced by tuberculosis of the bronchial glands, the treatment can be only symptomatic; hydrotherapeutics seem to be of some value. In the reflex forms, treatment must be directed to the cause; often where no nasal alteration appears caterization of the inferior turbinated bones mitigates the attack. Brissaud recommends general hygienic treatment, regulating the food mental, labor, etc.; in nervous subjects physical and hydro-therapeutic measures act favorably, particularly cold douches. In lymphatic subjects general tonic treatment with sea baths is to be recommended. In the febrile forms, prolonged tepid baths are of benefit. Medicines are of little value. In some cases methodical pulmonary gymnastics and the use of the pneumatic chamber are followed by favorable results. (A. D. CHAFFEE, New York.)

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An Aseptic Bivalve Vaginal Speculum in two Parts Only.

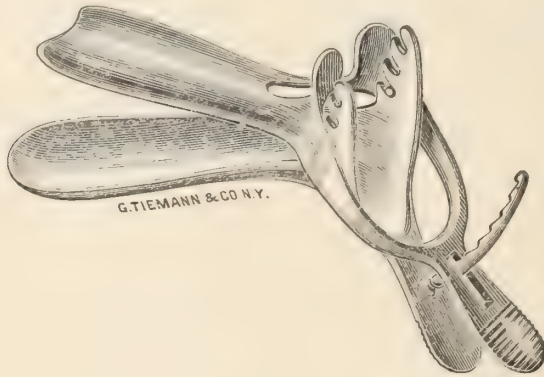
BY G. ORLO JEFFERSON, M.D., PORTLAND, OR.

There is no instrument used by the medical profession so universally necessary to any class of practitioners as is the bivalve vaginal speculum. It is the constant and indispensable assistant of the gynæcologist, the ally of the general practitioner, and often found of service to the specialists in other lines for occasional primary examinations. All bivalve specula so far invented have possessed the disadvantage of being extremely difficult to keep clean. That patients have been frequently infected with specific and purulent disease is well known.

For some months I have been endeavoring to devise a new instrument which might be easily made aseptic, and believe that the speculum which I now report covers a field in this line of instruments not heretofore occupied in the slightest degree. That vaginal

speculæ have in the past been faulty is manifested by the fact that very many gynæcologists of national reputation have given us instruments of so many forms and makes. From the many excellent features which my own possesses, I hope the speculum I now present will find a place in the profession, and be of service to my fellow-workers in gynæcological practice.

So far as I know, it is the only bivalve vaginal speculum made in two parts. I desire to call attention to the simplicity of construction, the ease and expediency with which the instrument may be employed, and the facility with which it can be taken apart and cleansed.



This speculum is self-retaining, opening and closing automatically by even side pressure. It will open at either or both ends of the valves and remain wherever it is locked until released. It has no screws, springs, hinges, bolts or inaccessible places for the accumulation of discharge, blood or dirt, and a good field of vision is happily provided. It is made in three sizes, for use in all classes of cases. It is also made with an attachment for a drainage tube.

The crescent shape in the tip of the upper blade, which is also a new device, is of much assistance in locating and bringing into view the cervix, as well as holding it in the center of the field of vision.

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